Watershed Restoration Action Strategy for the Little Calumet-Galien Watershed

Part II: Concerns and Recommendations

Prepared for

Indiana Department of Environmental Management
Office of Water Quality
Watershed Management Section

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Part II, FOREWORD

The Little Calumet-Galien Watershed Restoration Action Strategy (WRAS) is intended to be a living document designed to assist restoration and protection efforts of stakeholders in their sub-watersheds. As a "living document" information contained within the WRAS will need to be revised and updated periodically.

The WRAS is divided into two parts: Part I, Characterization and Responsibilities and Part II, Concerns and Recommendations.

The first draft of the Little Calumet-Galien WRAS was released for public review during the spring of 2002. A 60-day public comment period followed the public meetings at which this WRAS document was introduced. This final version of the WRAS includes public comments received during the 60-day comment period. For comments to be included in the final version, they were required to be written and submitted to WHPA, Inc. (the firm contracted to produce this WRAS) during the comment period.

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Part II, Chapter 1: Concerns and Recommendations

Part II of the Watershed Restoration Action Strategy discusses the water quality concerns identified for the Little Calumet-Galien Watershed and lists recommended management strategies to address these concerns.

Part II includes:

Section 1 - Water Quality Concerns and Priority Issues Identified by Stakeholder Groups

Section 2 - Water Quality Concerns and Priority Issues Identified by State and Federal Agencies

Section 3 - Identification of Impaired Waters

Section 4 - Priority Issues and Recommended Management Strategies

Section 5 - Future Actions and Expectations

1. Water Quality Concerns and Priority Issues Identified by Stakeholder Groups

The Little Calumet-Galien watershed contains potential stakeholder groups that have different missions (contact information is included in Appendix C). Many of these groups have a long history of working in the Little Calumet-Galien watershed. The following discussion briefly describes some of the watershed groups.

Natural Resources Conservation Service

The Natural Resources Conservation Service (NRCS), under the U.S. Department of Agriculture (USDA), provides leadership in a partnership effort to help people conserve, maintain, and improve our natural resources and environment. The NRCS offers landowners financial, technical, and educational assistance to implement conservation practices on privately owned land. Using this help, farmers, ranchers, and forest landowners apply practices that reduce soil erosion, improve water quality, and enhance crop land, forest land, wetlands, grazing lands, and wildlife habitat. Incentives offered by USDA promote sustainable agricultural and forestry practices, which protect and conserve valuable farm and forest land for future generations. USDA assistance also helps individuals and communities restore natural resources after floods, fires, or other natural disasters.

Soil and Water Conservation Districts

Local Soil and Water Conservation Districts (SWCD) assist land users and residents in the protection and improvement of the local environment. SWCDs can provide technical and financial assistance to local watershed conservation groups.

Grand Calumet Task Force

The Grand Calumet Task Force is a community environmental organization which works to improve the land, air and water quality of the Grand Calumet River and the urban ecosystem that surrounds it and to achieve environmental justice for the people of Northwest Indiana.

Goals:

To restore the Grand Calumet River Basin, including the adjacent wetlands and near shore Lake Michigan;

To alert the community about the impact of pollution on human health and the environment;

To promote public involvement and decision-making in all aspects of environmental protection and restoration;

To promote environmentally sound jobs and diverse economic development in sustainable communities;

To be a catalyst for the people, their organizations, businesses and governments to come together to eliminate the effects of over 100 years of industrial pollution;

To disclose and fight environmental discrimination actions and policies by industry or government that place unfair burdens on people of color and the poor;

To support and/or participate in regional development initiatives that preserve and enhance the ecosystem;

To be a resource for residents of at-risk communities who assert their environmental rights.

Hoosier River Watch

Hoosier Riverwatch is a state-sponsored water quality monitoring initiative. The program was started in 1994 to increase public awareness of water quality issues and concerns by training volunteers to monitor stream water quality. Hoosier Riverwatch collaborates with agencies and volunteers to:

- Increase public involvement in water quality issues through hands-on training of volunteers in stream monitoring and cleanup activities.
- Educate local communities about the relationship between land use and water quality.
- Provide water quality information to citizens and governmental agencies working to protect Indiana's rivers and streams.

Lake Michigan Coastal Program

Indiana is developing the Lake Michigan Coastal Program (LMCP) to participate in a national initiative, Coastal Zone Management Program, with 33 other coastal states to protect, restore, and responsibly develop Indiana's coastal area. The purpose of the LMCP is to support coordination and partnerships among local, state, and federal agencies and local organizations for the protection and sustainable use of natural and cultural resources in the Lake Michigan region. The LMCP is based on Indiana's existing laws. It does not create any new laws. Development of the LMCP will make more than $900,000 (based on the proposed 2001 Congressional budget) available annually to implement the LMCP and for grants to communities in northwest Indiana. Examples of how these funds might be used include:

Protection and restoration of significant natural and cultural resources.

Programs to prevent the loss of life and property in coastal hazard areas.

Improved public access for recreational purposes.

Revitalized urban waterfronts and ports.

Improved coordination among government agencies in policy and decision-making processes.

Pollution prevention initiatives, including non-point source pollution into coastal waters.

Little Calumet River Project

The Little Calumet River Watershed is an area draining into Lake Michigan from Will and Cook Counties in Illinois; Lake, Porter and LaPorte Counties Indiana; and Berrien County in Michigan. The watershed project area includes land in the Hydrologic Units 712003 and 04040001 as determined by the U.S. Geological Survey, Department of Interior. The Porter and Lake Soil and Water Conservation Districts in Indiana and the Will-South Cook County Soil and Water Conservation District in Illinois have signed a mutual agreement to proceed with the development of the Little Calumet River Project.

The Little Calumet River Planning initiative resulted from the concerns of local landowners/occupiers living in the area. Watershed planning is recognized as one method to give local stakeholders the opportunity to identify their desired future conditions while enlisting the assistance and support of agencies and organizations involved in administering technical or financial support to natural resources issues.

The Illinois Little Calumet Watershed Plan, dated November 1978, identified several issues, however, the upper area involving Lake County, Indiana was not included. The importance of an updated comprehensive watershed plan involving both Illinois and Indiana is recognized as a valuable document that will reflect the goals of the stakeholders in the Little Calumet Watershed. The Porter and Lake Soil and Water Conservation Districts of Indiana and the Will-South Cook County Soil and Water Conservation District of Illinois are taking the lead to assist in this effort.

The watershed plan will identify the needs, while the agencies and organizations involved in the watershed activities will be asked for their support for solutions to the needs that the area faces. This will enable the local citizens to reside in this geographical area and enjoy the quality of life they have come to expect.

NIRPC

The Northwestern Indiana Regional Planning Commission (NIRPC) is developing a watershed management plan for the Little-Calumet-Galien and Kankakee basins that are located in Lake, Porter and LaPorte Counties. A Watershed Management Advisory Group has been formed with stakeholders from the three counties. The plan will be completed by the summer of 2005 addressing issues such as water quality enhancement, restoration and protection, land use planning, farm preservation, government regulation, coordination and enhancement, wetland preservation, and public education.

Northwest Territory RC&D

The Northwest Territory Resource Conservation and Development program helps people protect and develop their economic, natural and social resources in ways that improve their area's economy, environment, and quality of life. The NWT RC&D Council provides a way for people to plan and implement projects in Lake, Porter, and St. Joseph counties that will make our communities a better place to live.

Save the Dunes

The Save the Dunes Council of northwest Indiana was founded in 1952, one of the oldest grassroots conservation organizations in the country. Its objectives are to maintain and restore the integrity and quality of the natural environment of the Indiana Dunes region. The hard work of Save the Dunes Council members led to the establishment of the Indiana Dunes National Lakeshore in 1966; the group continues to work on a wide variety of issues concerning the Dunes and the environmental quality of the area. The efforts of the Save the Dunes Council are supported entirely by membership dues, donations and volunteer time.

The Save the Dunes Conservation Fund was established in 1994 to restore and protect the environment of the Indiana Dunes. Among its activities the Conservation Fund has restored a foredune on Gary's Lake Michigan shoreline, has assisted the Minority Health Coalition of LaPorte County on projects in the area of a Superfund site, and has worked with teachers, individuals, and agencies to monitor the health of local streams and waterways.

Shirley Heinze Environmental Fund

The Shirley Heinze Environmental Fund, a non-profit organization, was endowed in 1981 as a charitable trust to preserve and

protect the unique ecosytems of the Indiana Dunes region. The Heinze Fund's goals are threefold: (1) to protect endangered habitats through the acquisition and restoration of environmentally significant properties; (2) to promote environmental awareness through community outreach programs and publications; and (3) to advance the goals of clean air and water for Northwest Indiana.

LaPorte County Parks & Rec

The LaPorte County Parks Department manages several parks in the county that include a variety of ecosystems: upland forest, wetland, prairie, and stocked ponds. The Red Mill Property includes a 100-acre nature preserve and the headwaters to the Little Calumet River. The dam, circa 1830, was originally built to support a grist sawmill, but now provides open water and wetland habitat for a variety of wildlife. The Parks Department is currently applying for a grant from the Indiana DNR Division of Water-Lake Michigan Coastal Program for maintenance and dredging work upstream of the dam. This will promote both recreational activities and wetland preservation in the Little Calumet Headwaters State Dedicated Nature Preserve associated with the park.

Laporte County Conservation Trust Inc.

The LaPorte County Conservation Trust is an all volunteer, non-profit 501 (c) (3) organization committed to maintaining and improving water quality in LaPorte County. As a land trust, they are dedicated to protecting natural lands by purchasing and accepting donations of land or conservation easements. They currently own a 23 acre state nature preserve known as Wintergreen Woods, a wet woodland that contains a drainage into the Trail Creek Watershed. They also perform educational functions concerning land conservation and bio-diversity.

Part II, Chapter 2: Water Quality Concerns and Priority Issues Identified by State and Federal Agencies

This section presents the combined efforts of state and federal agencies, and universities (such as IDEM, IDNR, USDA-Natural Resources Conservation Service, Ohio River Valley Water Sanitation Commission, Purdue University, Indiana University, Indiana Geologic Survey, and US Geological Survey) to assess water quality concerns and priority issues in the Little Calumet-Galien Watershed. This multi-organization effort formed the basis of the Unified Watershed Assessment for Indiana. At this time, the Unified Watershed Assessment has been completed for 1998 and updated for 2000-2001.

Indiana's Unified Watershed Assessment (UWA)

The UWA workgroup gathered a wide range of water quality data that could be used to characterize Indiana's water resources. These data were used in 'layers' in order to sort the 8-digit HUC watersheds according to the present condition of the water in lakes, rivers, and streams. The workgroup used only those data which concerned the water column, organisms living in the water, or the suitability of the water for supporting aquatic ecosystems. Each 'layer' of information/data was partitioned by percentiles into scores. The scores ranged between one and five, with a score of one indicative of good water quality or minimum impairment, and a score of five indicating heavily impacted or degraded water quality.

The data layers used in the 1998 and the 2000-2001 update include:

- Lake Fishery: Large-mouth bass community information for lakes
- Stream Fishery: Small-mouth bass community information for streams
- Aquatic Life Use Support: The "livability" of the water column for aquatic life, determined from evaluation of chemical and physical water data, and assessment of aquatic life
- Fish Consumption Advisories: Site specific advisories based on current data
- Fish Index of Biotic Integrity: Based on fish community diversity and fish health
- Qualitative Habitat Evaluation Index: Measure of whether the aquatic habitat is suitable for diverse communities, based on visual observations
- Lake Trophic Scores: Indicator for the rate at which a lake is 'aging' due to inputs of nutrients and other factors
- Sediment Potential: Indicator of potential sediment input to waterbodies in the watershed

The sources and additional information for these data layers include:

- Lake Fishery: From IDNR fisheries surveys of lakes and reservoirs from 1972 to 1994. Raw scores were averaged for all lakes in the watershed
- Stream Fishery: From IDNR fisheries surveys of streams from 1970 to 1994. Raw scores were averaged for all streams in the watershed

- Aquatic Life Use Support: IDEM, Office of Water Quality, Assessment Branch
- Fish Consumption Advisories: ISDH and IDEM, Office of Water Quality, Assessment Branch
- Fish Index of Biotic Integrity: IDEM, Office of Water Quality, Assessment Branch
- Qualitative Habitat Evaluation Index: IDEM, Office of Water Quality, Assessment Branch
- Lake Trophic Scores: Indiana Clean Lakes Program through IDEM, Office of Water Quality, Assessment Branch. This score was based on information gathered from sampling conducted in the 1970's and 1980's

During summer 1999 the UWA workgroup used additional layers of information to identify the resource concerns and stressors for each of the 361 11-digit watersheds in Indiana. Examination of the human activities that have the potential to impact the ecosystem will help planners to focus on those areas where restoration may be most critical. Organizations can identify opportunities to use their programs and resources to address those areas.

This focusing process will illuminate areas where the interests of two or more partner agencies may converge. It is intended that this will lead to more effective allocation of resources for restoration and protection activities. At the local level, this information can assist groups to prioritize watershed activities and provide some discussion points for planning.

This amended assessment has the following benefits:

- Provides a logical process for targeting funds, which may be expanded or updated without changing the basic framework.
- Provides information at a finer resolution (11-digit hydrologic units) to agencies and local groups interested in watershed assessment.
- Identifies data gaps.
- Can be used as a compliment to other assessments, such as the 305(b) Report and 303(d) List.

Table 2-1 and Figure 2-1 show the results of the 2000-2001 UWA for the Little Calumet-Galien watershed (NRCS & IDEM 2000).

Part II, Chapter 3: Identification of Impaired Waters

Section 303(d) of the Clean Water Act requires states to identify waters that do not or are not expected to meet applicable water quality standards with federal technology-based standards alone. States are also required to develop a priority ranking for these waters taking into account the severity of the pollution and the designated uses of the waters. Indiana's 303(d) list was approved by EPA on February 16, 1999.

Once the Section 303(d) list and ranking of waters is completed, the states are required to develop Total Maximum Daily Loads (TMDLs) for these waters in order to achieve compliance with the water quality standards. The TMDL is an allocation that determines the point and nonpoint source (plus margin of safety) load reductions required in order for the waterbody to meet water quality standards. IDEM's Office of Water Quality has and continues to perform point source waste load allocations for receiving waters. Part I of the WRAS briefly outlines IDEM's strategy for developing TMDLs.

Table 0-1 shows the Little Calumet-Galien Watershed waterbodies that are on Indiana's 1998 Clean Water Act Section 303(d) list submitted and approved by EPA (IDEM 1998, Figure 3-1). The 2002 draft 303(d) list has been completed and the final list will be released in October 2002. The draft 2002 list is not included in this document, but is available from IDEM's Office of Water Quality (http://www.state.in.us/idem/water/planbr/wqs/303d.html)

Part II, Chapter 4: Priority Issues and Recommended Management Strategies

Part I provided the existing water quality information for the Little Calumet-Galien Watershed and Part II lists priority issues and concerns from local, state, and federal stakeholders in the watershed. This section pulls together the priority issues and concerns held by all stakeholders and recommends management strategies. Underlying all discussions of priority issues and concerns is the fact that improving water quality in the Little Calumet-Galien Watershed will also enhance the natural and recreational values of the Little Calumet River . Each subsection below focuses on a single priority issue.

4.1 Data/Information and Targeting

The success in restoring water quality in the Little Calumet-Galien Watershed is fundamentally based on identifying the specific geographic problem areas; identifying all sources contributing to the impairment of the waterbody; and quantifying the contribution of a pollutant by each source.

Recommended Management Strategy 1: Numerous data collection efforts are ongoing in the Little Calumet-Galien Watershed. This information should be used in prioritizing and targeting specific problems and geographic areas in the watershed. The scale at which targeting and prioritization should occur is the 14-digit HUC watershed area (Figure 2-2 of Part I). Targeting and prioritization will require input from stakeholders living in those geographic areas. The purpose of prioritization and targeting is to enhance allocation of resources in the effort of improving water quality.

Recommended Management Strategy 2: Through the development of Total Maximum Daily Loads (TMDLs) for impaired waterbodies in the Little Calumet-Galien Watershed, all sources contributing to the impairment of a waterbody will be identified and quantified in terms of their contribution to the waterbody. This includes gathering more data and information on nonpoint sources of water pollution. Throughout the TMDL process, information and feedback from watershed stakeholders will be required in order to generate appropriate allocation scenarios. The result of developing TMDLs will be an understanding of the impact of nonpoint sources on water quality in the watershed.

4.2 Streambank Erosion and Stabilization

The cutting and erosion of streambanks within the Little Calumet-Galien Watershed is a major concern. This cutting and erosion increases the sediment load in waterbodies and directly impacts the scenic and recreational values of waterbodies in the Little Calumet-Galien Watershed. Streambank cutting and erosion is often a function of many factors that include stream energy and velocity, flooding, and land management. Increased drainage in headwater streams and ditches increases stream energy during rainfall events and often leads to increased streambank cutting and erosion downstream. Land clearing and urban development also impact volume and velocity of runoff. Hence, this problem is not easily solved.

Recommended Management Strategy 1: Structural stabilization of specific streambank areas in the Little Calumet-Galien watershed may solve problems on a temporary basis. However, a comprehensive understanding of drainage, stream flows and energies, and land management practices is required to adequately approach this problem. Conservation partners (local, state, and federal) are actively working within their specific geographic areas (typically at the county level); however, this may not facilitate solving the streambank cutting and erosion problems because efforts may not be coordinated between headwater and downstream areas. For example, drainage should take into account the work and efforts of downstream partners to reduce flooding and streambank cutting. Conservation efforts should be in the context of watersheds and span county boundaries in order to account for downstream impacts. Local Drainage Boards, Planning and Zoning Boards, and County Commissioners could effectively address this issue by involving local stakeholders in the decision making process and approaching the issue on a watershed basis.

4.3 Failing Septic Systems and Straight Pipe Discharges

Local county health departments and other stakeholders have identified failing septic systems and straight pipe discharge from septic tanks as significant sources of water pollution in the Little Calumet-Galien watershed. Straight pipe discharges from septic tanks and septic tanks connected to drainage tiles are illegal (327 IAC 5-1-1.5); however, these practices still exist in the Little Calumet-Galien watershed.

Recommended Management Strategy 1: The direct impact of communities discharging their septic tank effluent to waterbodies needs to be adequately characterized. This will involve coordination between the Office of Water Quality, local health departments, Indiana State Department of Health, and other stakeholders. The choice to eliminate the illegal discharges will be a cooperative effort between homeowners and local, state, and federal stakeholders.

Recommended Management Strategy 2: Local planning, zoning, and health ordinances could be adopted or strengthened to address this problem during new development. Existing local ordinances could be enforced more vigorously to correct problems with existing systems. Both of these strategies will require input from local stakeholders.

Recommended Management Strategy 3: An education/outreach program on the health and environmental risks of septic system discharges, system maintenance, and system function would provide homeowners and others with basic information to better understand the impacts of inadequate systems. This kind of education effort would involve local health departments, Indiana State Department of Health, IDEM, and other stakeholders. For example, the Arrowhead Country RC&D in northwest Indiana is working on a project to demonstrate proper septic system installation.

4.4 Water Quality - General

The Clean Water Act Section 303(d) list presented in Chapter 3 lists impaired waterbodies for the Little Calumet-Galien watershed.

Recommended Management Strategy: The Clean Water Act requires states to complete TMDLs for waterbodies listed on the Section 303(d) list. The Office of Water Quality is currently evaluating and exploring the modeling process and data needs required to complete TMDLs for the Section 303(d) listed waterbodies. Completion of a TMDL will involve loading allocations of a pollutant to both point and nonpoint sources. The development of TMDLs will involve meetings with stakeholder groups linked to the Section 303(d) waterbodies. As TMDLs are developed, this Watershed Restoration Action Strategy will be amended to incorporate the final TMDLs.

4.5 Fish Consumption Advisories

As noted in Part I and Part II, fish consumption advisories are concerns within the Little Calumet-Galien watershed.

Recommended Management Strategy 1: In many cases, the source of the contamination is unknown and may be from atmospheric deposition or some unknown discharge. To address this concern, the cause or source must be identified. Until that is accomplished, the fish consumption advisories should be followed.

4.6 Nonpoint Source Pollution - General

Nonpoint source pollution contributions are often difficult to assess or quantify. They can include sediment deposition from soil erosion, nutrient runoff from animal wastes and commercial fertilizer, herbicide and insecticide runoff, and oil or fuel waste runoff. Degraded wetlands may also contribute to nonpoint source pollution, as their capacity for abatement of runoff and the associated pollutants is diminished or lost. Nonpoint pollution can emanate from agricultural as well as urban lands. Currently, loadings of nonpoint source pollutants to water are often inferred by examination of land use practices, without actual measurements. In addition, the actual water quality impairments related to nonpoint source pollutants have not been well characterized in the Little Calumet-Galien watershed. Finally, very few regulatory control mechanisms exist to control nonpoint source pollution.

Recommended Management Strategy 1: Through the TMDL development process, the Office of Water Quality will identify, assess, and quantify nonpoint source pollutant loadings to impaired waterbodies. In order to accomplish this task, the Office of Water Quality will work closely with local, state, and federal stakeholders at the watershed and subwatershed level. Loading scenarios for nonpoint source pollutants will be developed by the Office of Water Quality and reviewed by local, state, and federal stakeholders. Implementation of nonpoint source controls will involve a blend of funding assistance and regulatory action, where applicable.

Recommended Management Strategy 2: Numerous funding mechanisms, such as Conservation Reserve Program, Environmental Quality Incentive Program, Lake and River Enhancement program, and 319(h) grants, exist to promote practices to reduce nonpoint source pollution in the watershed. To more efficiently and effectively address nonpoint source pollution in the watershed, the prioritization and targeting discussed previously in Part II should be used to allocate further application of resources.

Recommended Management Strategy 3: The management of urban nonpoint sources can be addressed through effective land use planning and site design. Designs that incorporate less impervious area and more natural infiltration areas have proven effective in reducing urban nonpoint pollution. Local stakeholders working with local planning and zoning authorities, and developers, should implement more stringent site design requirements to reduce nonpoint source contaminants. This effort would be supported by the state and federal stakeholders.

Recommended Management Strategy 4: Practicing the following management measures for NPS pollution abatement may significantly reduce the sediment, nutrient, pesticide and other pollutant contributions to surface waters:
1) Protection of Wetlands and Riparian Areas of those serving a significant NPS pollution abatement function
2) Restoration of Wetlands and Riparian Areas of preexisting functions in damaged and destroyed areas, esp. where the systems will serve significant NPS pollution abatement function
3) Vegetated Treatment Systems (VTS) to promote use of constructed wetlands and vegetated filter strips where these systems will serve significant NPS pollution abatement function
*The information on degraded wetlands as potential contributors to nonpoint source pollution and the management measures for NPS pollution abatement is compiled from the USEPA Draft Guidance entitled "National Management Measures to Protect and Restore Wetlands and Riparian Areas for the Abatement of Nonpoint Source Pollution" (EPA 841-B-01-001 June 2001).

4.6.1 Nonpoint Source Pollution- Education and Outreach

This Watershed Restoration Action Strategy is a beginning point for education and outreach efforts. It compiles existing knowledge about the water resources in this watershed and presents it to the stakeholders who live in the Little Calumet-Galien watershed. It brings to a public forum the available information and local concerns. However, the education process does not stop with the publication of this document.

Recommended Management Strategy: Local stakeholders, in cooperation with state and federal agencies, need to seek additional information on water quality concerns and issues addressed in this document and make that information available to the public. Additionally, the problems associated with septic failures, soil erosion, land use issues, and riparian zones can be emphasized through meetings, training sessions, and stakeholder group discussions. Field days are excellent ways to present information and encourage discussion. Use of experts with strong background knowledge coupled with local sponsors is an effective method to convey solutions to these problems.

4.7 Point Sources - General

There are 337 active NPDES permitted dischargers, and 43 CSO discharge points in the Little Calumet-Galien watershed. Additionally there are illegal point source discharges, such as tiles discharging septic tank effluent that exist in the watershed.

Recommended Management Strategy: The Permitting and Compliance Branch of the Office of Water Quality is responsible for issuing and monitoring compliance of NPDES permit holders. Clearly, more emphasis and resources are needed to identify and correct illegal point sources and noncomplying point sources. Improving compliance of NPDES dischargers and identifying illegal dischargers will involve fostering a working relationship with other local, state, and federal stakeholders to monitor compliance and report unusual discharges or stream appearance. In regards to illegal discharges, the Office of Water Quality will work with local, state, and federal stakeholders to identify and eliminate these sources of water pollution.

Part II, Chapter 5: Future Expectations and Actions

As discussed in Part I, this Watershed Restoration Action Strategy is intended to be a fluid document that will be revised or amended as new information becomes available. Section 5.1 discusses expectations derived from the Strategy and how progress will be measured. Specific revisions and amendments to the Watershed Restoration Action Strategy are discussed in Section 5.2. Finally, the Watershed Restoration Action Strategy will be reviewed by all stakeholders before it becomes final, as described in Section 5.3.

5.1 Expectations and Measuring Progress

The Little Calumet-Galien Strategy provides a starting point to address water quality concerns held by local, state, and federal stakeholders. Part II provides recommended management strategies to address these concerns. Through cooperative efforts with stakeholders, all of the recommended management strategies listed will begin implementation by the summer of 2003.

Measurement of progress is critical to the success of any plan. Water quality improvements will not take place overnight. Measuring of progress in terms of water quality will be provided through the Office of Water Quality Assessment Branch's rotating basin monitoring strategy.

5.2 Expected Revisions and Amendments

This Watershed Restoration Action Strategy is intended to provide a starting point to improve water quality and measure the improvement. Hence, this document will require revisions and amendments as new information becomes available. The future revisions and amendments have been divided into those that are expected within the next year (Section 5.2.1) and those that will occur over a long-term basis (Section 5.2.2).

5.2.1 Short Term Revisions and Amendments

The most significant revisions and amendments will likely occur during 2002 and after, as a result of stakeholder review.

5.2.2 Long Term Revisions and Amendments

The Office of Water Quality is moving toward adopting a watershed management approach to solve water quality problems. Part of the watershed approach is the use of a rotating basin management cycle. The Assessment Branch of the Office of Water Quality has already adopted this rotating basin cycle in its intensive monitoring and assessment of Indiana waterbodies (this is in addition to the already established fixed station monitoring which occurs on a monthly basis). The Watershed Restoration Action Strategy may be revised or amended when sufficient information becomes available.

5.3 Review of the Watershed Restoration Action Strategy

Before this Watershed Restoration Action Strategy becomes final, it will undergo rigorous review. The first stage of review will be performed internally by the Office of Water Quality. Once the Watershed Restoration Action Strategy has been revised to address internal Office of Water Quality comments, it will be circulated to local, state, and federal stakeholders in the watershed. Written comments from local, state, and federal stakeholders will be addressed and the Watershed Restoration Action Strategy will again be revised to incorporate applicable comments. Once internal and external comments have been addressed, the final version of the Watershed Restoration Action Strategy will be released.

Part II Tables

TABLE 2-1: UNIFIED WATERSHED ASSESSMENT FOR THE LITTLE CALUMET-GALIEN WATERSHED, 2000-2001

Hydrologic Unit Scores for Each Parameter Used in the Unified Watershed Assessment [2000-2001]															
	Measured Parameters														
11 Digit Hydrologic Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
04040001010	nd	nd	nd	nd	nd	nd	nd	1	nd	1	nd	1	1	1	1
04040001020	nd	nd	nd	nd	nd	nd	3	5	2	1	4	4	1	2	1
04040001030	nd	nd	nd	nd	nd	nd	3	4	3	1	5	3	1	2	1
04040001040	nd	nd	nd	nd	nd	nd	nd	5	2	1	5	3	2	2	1
04040001050	nd	nd	nd	nd	nd	nd	3	3	2	1	5	3	2	2	1
04040001060	nd	nd	nd	nd	nd	nd	nd	5	3	1	5	2	2	2	1
04040001070	nd	nd	nd	nd	nd	nd	nd	5	2	1	5	2	3	3	1
04040001080	nd	nd	nd	nd	nd	nd	nd	5	2	1	5	3	2	2	1
04040001090	nd	nd	nd	nd	nd	nd	nd	5	3	1	5	2	3	3	1
04040001100	nd	nd	nd	nd	nd	nd	nd	4	3	1	4	2	3	3	1
07120003030	nd	nd	nd	nd	nd	nd	nd	5	3	1	5	4	1	2	1
07120003040	nd	nd	nd	nd	nd	nd	nd	1	4	1	1	3	1	2	1
07120003050	nd	nd	nd	nd	nd	nd	nd	2	2	1	1	5	1	2	1

KEY
Parameters:

1 - Mussel Diversity and Occurrence
2 - Aquatic Life Use Support
3 - Recreational Use Attainment
4 - Stream Fishery
5 - Lake Fishery
6 - Eurasian Milfoil Infestation Status
7 - Lake Trophic Status
8 - Critical Biodiversity Resource
9 - Aquifer Vulnerability
10 - Population Using Surface Water for Drinking Water
11 - Residential Septic System Density
12 - Degree of Urbanization
13 - Density of Livestock
14 - % Cropland
15 - Mineral Extraction Activities

Score range:
1 = good water quality (minimum impairment)
5 = heavily impacted or degraded water quality
nd = no data

(from NRCS & IDEM 2000)

TABLE 0-1: WATERS OF THE LITTLE CALUMET-GALIEN ON INDIANA'S 1998 303(D) LIST

ID	Waterbody	Parameter of Concern	Priority for TMDL development
ILHAA01_HAA01-1998	CALUMET R	AMMONIA METALS NUTRIENTS ORGANIC ENRICHMENT/LOW DISSOLVED OXYGEN OTHER HABITAT ALTERATIONS	34
ILHAA01_HAA02-1998	CALUMET R	AMMONIA METALS NUTRIENTS ORGANIC ENRICHMENT/LOW DISSOLVED OXYGEN OTHER HABITAT ALTERATIONS	34
ILRHA-1998	WOLF	NUTRIENTS SILTATION ORGANIC ENRICHMENT/LOW DISSOLVED OXYGEN SUSPENDED SOLIDS NOXIOUS AQUATIC PLANTS	34
IN-0001BIOTA-1998	BEAVER DAM DITCH	IMPAIRED BIOTIC COMMUNITIES	2005-2007
IN-0002BIOTA-1998	BURNS DITCH	IMPAIRED BIOTIC COMMUNITIES	2005-2007
IN-0002ECOLI-1998	BURNS DITCH	E. COLI	2000-2004
IN-0002FCMRC-1998	BURNS DITCH	FCA - MERCURY	2010-2012
IN-0002FCPCB-1998	BURNS DITCH	FCA - PCBS	2010-2012
IN-0002LEAD-1998	BURNS DITCH	LEAD	2000-2004
IN-0002PESTI-1998	BURNS DITCH	PESTICIDES	2000-2004
IN-0005BIOTA-1998	DEEP RIVER	IMPAIRED BIOTIC COMMUNITIES	2005-2007
IN-0006BIOTA-1998	DUNES CREEK	IMPAIRED BIOTIC COMMUNITIES	2005-2007
IN-0008BIOTA-1998	GRAND CALUMET RIVER (EAST BRANCH)	IMPAIRED BIOTIC COMMUNITIES	1998-2000

ID	Waterbody	Parameter of Concern	Priority for TMDL development
IN-0008COPPR-1998	GRAND CALUMET RIVER (EAST BRANCH)	COPPER	1998-2000
IN-0008CYAND-1998	GRAND CALUMET RIVER (EAST BRANCH)	CYANIDE	1998-2000
IN-0008FCMRC-1998	GRAND CALUMET RIVER (EAST BRANCH)	FCA - MERCURY	1998-2000
IN-0008FCPCB-1998	GRAND CALUMET RIVER (EAST BRANCH)	FCA - PCBS	1998-2000
IN-0008LEAD-1998	GRAND CALUMET RIVER (EAST BRANCH)	LEAD	1998-2000
IN-0008OILGR-1998	GRAND CALUMET RIVER (EAST BRANCH)	OIL AND GREASE	1998-2000
IN-0008PESTI-1998	GRAND CALUMET RIVER (EAST BRANCH)	PESTICIDES	1998-2000
IN-0009AMMON-1998	GRAND CALUMET RIVER (WEST BRANCH)	AMMONIA	1998-2000
IN-0009BIOTA-1998	GRAND CALUMET RIVER (WEST BRANCH)	IMPAIRED BIOTIC COMMUNITIES	1998-2000
IN-0009CHLRD-1998	GRAND CALUMET RIVER (WEST BRANCH)	CHLORIDES	1998-2000
IN-0009CYAND-1998	GRAND CALUMET RIVER (WEST BRANCH)	CYANIDE	1998-2000
IN-0009DISOX-1998	GRAND CALUMET RIVER (WEST BRANCH)	DISSOLVED OXYGEN	1998-2000
IN-0009FCMRC-1998	GRAND CALUMET RIVER (WEST BRANCH)	FCA - MERCURY	1998-2000
IN-0009FCPCB-1998	GRAND CALUMET RIVER (WEST BRANCH)	FCA - PCBS	1998-2000
IN-0009LEAD-1998	GRAND CALUMET RIVER (WEST BRANCH)	LEAD	1998-2000
IN-0009PESTI-1998	GRAND CALUMET RIVER (WEST BRANCH)	PESTICIDES	1998-2000
IN-0010FCPCB-1998	GRAND CALUMET RIVER LAGOONS / MARQUETTE PARK LAGOON	FCA - PCBS	1998-2000
IN-0011DISOX-1998	INDIANA HARBOR CANAL (IHC)	DISSOLVED OXYGEN	1998-2000
IN-0011FCMRC-1998	INDIANA HARBOR CANAL (IHC)	FCA - MERCURY	1998-2000
IN-0011FCPCB-1998	INDIANA HARBOR CANAL (IHC)	FCA - PCBS	1998-2000
IN-0011LEAD-1998	INDIANA HARBOR CANAL (IHC)	LEAD	1998-2000
IN-0011PESTI-1998	INDIANA HARBOR CANAL (IHC)	PESTICIDES	1998-2000
IN-0012BIOTA-1998	INDIANA HARBOR CANAL (LAKE GEORGE BRANCH OF)	IMPAIRED BIOTIC COMMUNITIES	1998-2000

ID	Waterbody	Parameter of Concern	Priority for TMDL development
IN-0012DISOX-1998	INDIANA HARBOR CANAL (LAKE GEORGE BRANCH OF)	DISSOLVED OXYGEN	1998-2000
IN-0012FCMRC-1998	INDIANA HARBOR CANAL (LAKE GEORGE BRANCH OF)	FCA - MERCURY	1998-2000
IN-0012FCPCB-1998	INDIANA HARBOR CANAL (LAKE GEORGE BRANCH OF)	FCA - PCBS	1998-2000
IN-0012OILGR-1998	INDIANA HARBOR CANAL (LAKE GEORGE BRANCH OF)	OIL AND GREASE	1998-2000
IN-0012PESTI-1998	INDIANA HARBOR CANAL (LAKE GEORGE BRANCH OF)	PESTICIDES	1998-2000
IN-0015FCPCB-1998	LAKE GEORGE	FCA - PCBS	2010-2012
IN-0017ECOLI-1998	LAKE MICHIGAN	E. COLI	2000-2004
IN-0017FCMRC-1998	LAKE MICHIGAN	FCA - MERCURY	2010-2012
IN-0017FCPCB-1998	LAKE MICHIGAN	FCA - PCBS	2010-2012
IN-0021CYAND-1998	LITTLE CALUMET RIVER	CYANIDE	2000-2004
IN-0021ECOLI-1998	LITTLE CALUMET RIVER	E. COLI	2000-2004
IN-0021FCMRC-1998	LITTLE CALUMET RIVER	FCA - MERCURY	2010-2012
IN-0021FCPCB-1998	LITTLE CALUMET RIVER	FCA - PCBS	2010-2012
IN-0021PESTI-1998	LITTLE CALUMET RIVER	PESTICIDES	2000-2004
IN-0022FCMRC-1998	LITTLE CALUMET RIVER	FCA - MERCURY	2010-2012
IN-0022FCPCB-1998	LITTLE CALUMET RIVER	FCA - PCBS	2010-2012
IN-0024BIOTA-1998	LITTLE CALUMET RIVER	IMPAIRED BIOTIC COMMUNITIES	2005-2007
IN-0024CYAND-1998	LITTLE CALUMET RIVER	CYANIDE	2000-2004
IN-0024FCMRC-1998	LITTLE CALUMET RIVER	FCA - MERCURY	2010-2012
IN-0024FCPCB-1998	LITTLE CALUMET RIVER	FCA - PCBS	2010-2012
IN-0024PESTI-1998	LITTLE CALUMET RIVER	PESTICIDES	2000-2004
IN-0029BIOTA-1998	NILES DITCH	IMPAIRED BIOTIC COMMUNITIES	2005-2007
IN-0034ECOLI-	SALT CREEK	E. COLI	2000-2004

ID	Waterbody	Parameter of Concern	Priority for TMDL development
1998			
IN-0037CYAND-1998	TRAIL CREEK	CYANIDE	2000-2004
IN-0037ECOLI-1998	TRAIL CREEK	E. COLI	2000-2004
IN-0037FCMRC-1998	TRAIL CREEK	FCA - MERCURY	2010-2012
IN-0037FCPCB-1998	TRAIL CREEK	FCA - PCBS	2010-2012
IN-0038BIOTA-1998	TURKEY CREEK	IMPAIRED BIOTIC COMMUNITIES	2005-2007
IN-0039FCPCB-1998	WOLF LAKE	FCA - PCBS	2010-2012
MI083301A-1998	GALIEN RIVER	E. COLI PATHOGENS	
MI083301D-1998	DEER CREEK	ALGAE BACTERIAL SLIMES MACROINVERTEBRATE COMMUNITY RATED POOR PATHOGENS	
MI083301E-1998	SAWYER CREEK	MACROINVERTEBRATE COMMUNITY RATED POOR	
MI083301F-1998	GALIEN RIVER, E. BR.	ALGAE NUTRIENTS	
MI083301G-1998	GALIEN RIVER	CHLORDANE FCA (PCBS)	
MI083301J-1998	BLOOD RUN	DEGRADED HABITAT SEDIMENTATION	
ILGI02_GI 04-1998	CHIC SAN & SHIP CANAL	AMMONIA METALS NUTRIENTS PH ORGANIC ENRICHMENT/LOW DISSOLVED OXYGEN FLOW ALTERATIONS OTHER HABITAT ALTERATIONS	6
ILGI02_GI 05-1998	CHIC SAN & SHIP CANAL	AMMONIA METALS NUTRIENTS PH ORGANIC ENRICHMENT/LOW	6

ID	Waterbody	Parameter of Concern	Priority for TMDL development
		DISSOLVED OXYGEN FLOW ALTERATIONS OTHER HABITAT ALTERATIONS	
ILGI03_GI 03-1998	CHIC SAN & SHIP CANAL	AMMONIA METALS NUTRIENTS PH ORGANIC ENRICHMENT/LOW DISSOLVED OXYGEN OTHER HABITAT ALTERATIONS	18
ILH01_H 01-1998	CALUMET-SAG CHANNEL	AMMONIA NUTRIENTS PRIORITY ORGANICS METALS ORGANIC ENRICHMENT/LOW DISSOLVED OXYGEN FLOW ALTERATIONS OTHER HABITAT ALTERATIONS	92
ILH02_H 02-1998	CALUMET-SAG CHANNEL	AMMONIA NUTRIENTS PRIORITY ORGANICS METALS ORGANIC ENRICHMENT/LOW DISSOLVED OXYGEN OTHER HABITAT ALTERATIONS	114
ILHA04_HA 04-1998	LITTLE CALUMET R N	AMMONIA NUTRIENTS PRIORITY ORGANICS METALS ORGANIC ENRICHMENT/LOW DISSOLVED OXYGEN OTHER HABITAT ALTERATIONS	138
ILHA04_HA 06-1998	LITTLE CALUMET R N	AMMONIA NUTRIENTS METALS ORGANIC ENRICHMENT/LOW DISSOLVED OXYGEN OTHER HABITAT ALTERATIONS	138
ILHAA01_HAA 01-1998	CALUMET R	AMMONIA METALS	34

ID	Waterbody	Parameter of Concern	Priority for TMDL development
		NUTRIENTS ORGANIC ENRICHMENT/LOW DISSOLVED OXYGEN OTHER HABITAT ALTERATIONS	
ILHAA01_HAA 40-1998	CALUMET R	AMMONIA NUTRIENTS METALS ORGANIC ENRICHMENT/LOW DISSOLVED OXYGEN	34
ILHAB01_HAB 41-1998	GRAND CALUMET R	AMMONIA PRIORITY ORGANICS METALS NUTRIENTS ORGANIC ENRICHMENT/LOW DISSOLVED OXYGEN OTHER HABITAT ALTERATIONS	305
ILHB42_HB 01-1998	LITTLE CALUMET R S	NUTRIENTS METALS SILTATION ORGANIC ENRICHMENT/LOW DISSOLVED OXYGEN OTHER HABITAT ALTERATIONS PATHOGENS	27
ILHB42_HB 42-1998	LITTLE CALUMET R S	AMMONIA NUTRIENTS METALS SILTATION ORGANIC ENRICHMENT/LOW DISSOLVED OXYGEN SALINITY/TDS/CHLORIDES PATHOGENS	27
ILHBD04_HBD 04-1998	THORN CR	NUTRIENTS METALS PH SALINITY/TDS/CHLORIDES OTHER HABITAT ALTERATIONS PATHOGENS	52
ILHC01_HC 01-1998	S BR CHICAGO R	AMMONIA METALS NUTRIENTS PH ORGANIC ENRICHMENT/LOW	14

ID	Waterbody	Parameter of Concern	Priority for TMDL development
		DISSOLVED OXYGEN FLOW ALTERATIONS OTHER HABITAT ALTERATIONS	
ILHC01_HC-1998	S BR CHICAGO R	METALS NUTRIENTS PH ORGANIC ENRICHMENT/LOW DISSOLVED OXYGEN FLOW ALTERATIONS OTHER HABITAT ALTERATIONS	14
ILHC01_HCA01-1998	S FK S BR CHICAGO R	AMMONIA METALS FLOW ALTERATIONS OTHER HABITAT ALTERATIONS	14
ILHC01_HCB01-1998	CHICAGO R	METALS NUTRIENTS OTHER HABITAT ALTERATIONS	14
ILHCC07_HCC07-1998	N BR CHICAGO R	PRIORITY ORGANICS NUTRIENTS METALS SILTATION ORGANIC ENRICHMENT/LOW DISSOLVED OXYGEN SALINITY/TDS/CHLORIDES PATHOGENS	39
ILHCC08_HCC02-1998	N BR CHICAGO R	NUTRIENTS METALS SILTATION ORGANIC ENRICHMENT/LOW DISSOLVED OXYGEN PATHOGENS	45
ILHCC08_HCC08-1998	N BR CHICAGO R	NUTRIENTS METALS SILTATION ORGANIC ENRICHMENT/LOW DISSOLVED OXYGEN PATHOGENS	45
ILHCCA01_HCCA01-1998	N SHORE CHANNEL	METALS NUTRIENTS SILTATION ORGANIC ENRICHMENT/LOW	42

ID	Waterbody	Parameter of Concern	Priority for TMDL development
		DISSOLVED OXYGEN FLOW ALTERATIONS OTHER HABITAT ALTERATIONS	
ILHCCA01_HCCA03-1998	N SHORE CHANNEL	AMMONIA METALS NUTRIENTS SILTATION ORGANIC ENRICHMENT/LOW DISSOLVED OXYGEN FLOW ALTERATIONS OTHER HABITAT ALTERATIONS PATHOGENS	42
ILHCCA01_HCCA04-1998	N SHORE CHANNEL	AMMONIA METALS NUTRIENTS SILTATION ORGANIC ENRICHMENT/LOW DISSOLVED OXYGEN FLOW ALTERATIONS OTHER HABITAT ALTERATIONS PATHOGENS	42
ILHCCA01_HCCA05-1998	N SHORE CHANNEL	METALS NUTRIENTS SILTATION ORGANIC ENRICHMENT/LOW DISSOLVED OXYGEN FLOW ALTERATIONS OTHER HABITAT ALTERATIONS	42
ILHCCC04_HCCC02-1998	MID FK N BR CHIC R	NUTRIENTS SILTATION ORGANIC ENRICHMENT/LOW DISSOLVED OXYGEN SALINITY/TDS/CHLORIDES NOXIOUS AQUATIC PLANTS	96
ILQZF-1998	WASHINGTON PARK LGN	METALS NUTRIENTS SILTATION ORGANIC ENRICHMENT/LOW DISSOLVED OXYGEN SUSPENDED SOLIDS NOXIOUS AQUATIC PLANTS	18
ILRHJ-1998	SKOKIE LAGOONS	NUTRIENTS	322

ID	Waterbody	Parameter of Concern	Priority for TMDL development
		SILTATION ORGANIC ENRICHMENT/LOW DISSOLVED OXYGEN PATHOGENS SUSPENDED SOLIDS NOXIOUS AQUATIC PLANTS	
ILRHR-1998	GEORGE	NUTRIENTS SILTATION ORGANIC ENRICHMENT/LOW DISSOLVED OXYGEN PATHOGENS SUSPENDED SOLIDS NOXIOUS AQUATIC PLANTS	236
ILRHS-1998	TURTLEHEAD	NUTRIENTS SILTATION ORGANIC ENRICHMENT/LOW DISSOLVED OXYGEN SUSPENDED SOLIDS NOXIOUS AQUATIC PLANTS	243
ILRHU-1998	SHERMAN PARK LAGOONS	METALS NUTRIENTS SILTATION ORGANIC ENRICHMENT/LOW DISSOLVED OXYGEN SUSPENDED SOLIDS NOXIOUS AQUATIC PLANTS	18
ILRHW-1998	GARFIELD PK LAGOON	METALS NUTRIENTS SILTATION ORGANIC ENRICHMENT/LOW DISSOLVED OXYGEN SUSPENDED SOLIDS NOXIOUS AQUATIC PLANTS	18
ILRHX-1998	DOUGLAS PARK LAGOON	METALS NUTRIENTS SILTATION ORGANIC ENRICHMENT/LOW DISSOLVED OXYGEN SUSPENDED SOLIDS NOXIOUS AQUATIC PLANTS	18
ILRHZA-1998	GOMPERS PARK LAGOON	NUTRIENTS SILTATION SUSPENDED SOLIDS	39
ILRHZE-1998	ARROWHEAD	NUTRIENTS ORGANIC ENRICHMENT/LOW	114

ID	Waterbody	Parameter of Concern	Priority for TMDL development
		DISSOLVED OXYGEN SUSPENDED SOLIDS NOXIOUS AQUATIC PLANTS	
IN-0023BIOTA-1998	LITTLE CALUMET RIVER	IMPAIRED BIOTIC COMMUNITIES	2005-2007
IN-0023CYAND-1998	LITTLE CALUMET RIVER	CYANIDE	2000-2004
IN-0023DISOX-1998	LITTLE CALUMET RIVER	DISSOLVED OXYGEN	2000-2004
IN-0023FCMRC-1998	LITTLE CALUMET RIVER	FCA - MERCURY	2010-2012
IN-0023FCPCB-1998	LITTLE CALUMET RIVER	FCA - PCBS	2010-2012
IN-0023PESTI-1998	LITTLE CALUMET RIVER	PESTICIDES	2000-2004
IN-0024BIOTA-1998	LITTLE CALUMET RIVER	IMPAIRED BIOTIC COMMUNITIES	2005-2007
IN-0024CYAND-1998	LITTLE CALUMET RIVER	CYANIDE	2000-2004
IN-0024FCMRC-1998	LITTLE CALUMET RIVER	FCA - MERCURY	2010-2012
IN-0024FCPCB-1998	LITTLE CALUMET RIVER	FCA - PCBS	2010-2012
IN-0024PESTI-1998	LITTLE CALUMET RIVER	PESTICIDES	2000-2004
IN-0055BIOTA-1998	DYER DITCH	IMPAIRED BIOTIC COMMUNITIES	2004-2006

FCA - Fish Consumption Advisory
PCB - Polychlorinated Biphenyls
Hg - Mercury

***Only waters for which fish tissue data support issuance of fish consumption advisories are individually cited above. The Indiana Department of Health has issued a general fish consumption advisory for all other waters of the state. This advisory was based on extrapolation of the fish tissue data that were available and generally recommends that if no site-specific advisory is in place for a waterbody, the public should eat no more than one meal (8 oz.) per week of fish caught in these waters. Women of child bearing age, women who are breast feeding, and children up to 15 years of age should eat no more than one meal per month. The basis for this general advisory is widespread occurrence of mercury or PCBs (or both) in most fish sampled throughout the state. Please refer to the most recent Fish Consumption Advisory booklet available through the Indiana Department of Health (317/233-7808). Sources of the mercury and PCBs are unknown for the most part, but it is suspected that they result from air deposition.

APPENDIX B

LITTLE CALUMET-GALIEN WATERS ASSESSED IN THE CLEAN WATER ACT SECTION 305(B) REPORT

Statewide data from the state's Clean Water Act Section 305(B) Report are available at the link below (IDEM's Office of Water Quality website) (http://www.state.in.us/idem/water/planbr/wqs/quality.html). Adobe Acrobat Reader(tm) is required to read these files.

- **Attachment A** - 1998 305 (B) Report (Upper White, Lower White, Patoka)
- **Attachment B** - 1999 & 2000 305 (B) Report (Eel-Wabash, Lower East Fork White, Middle Wabash-Deer, Muscatatuck, Salamonie, Upper East Fork White, Upper Wabash, Whitewater)
- **Attachment C** - 2001 305 (B) Report (Lower Wabash, Middle Wabash-Busseron, Middle Wabash-Little Vermilion, Sugar)
- **Attachment D** - 2002 305 (B) Report (Blue-Sinking, Little Calumet-Galien, Lower Ohio-Little Pigeon, Silver-Little Kentucky, St. Joseph-Maumee)

APPENDIX C

Potential Stakeholders

in the Little Calumet-Galien Watershed

Dunes Calumet Audubon Society
P.O. Box 1232
Crown Point, IN 46308-1232

Friends of Indiana Dunes
P.O. Box 166
Beverly Shores, IN 46301
219-926-7561

Grand Calumet Task Force
2400 New York Ave.
Whiting, Indiana 46394
219-473-4246

Hoosier Environmental Council
PO Box 1145
Indianapolis, IN 46206
317-685-8800

Hoosier River Watch
5785 Glenn Rd.
Indianapolis, Indiana 46216-1066
317-541-0617

Indiana Lakes Management Society
207 S. Wayne St., Suite B
Angola, IN 46703

Indiana Waterways Association
301 Fort Harrison Road
Terre Haute, IN 47804
812-460-1567

Izaak Walton League of America
Indiana Division President
2173 Pennsylvania Street
Portage, IN 46368-2448
219-762-4876

Kankakee Fish and Wildlife Area
4320 W. Toto Road
North Judson, IN 46366
219-896-3673

Know Your Watershed
Conservation Technology Information Ctr
1220 Potter Drive, Room 170
West Lafayette, IN 47906-1383
765-494-9555

Lake Michigan Coastal Program
IDNR
402 W. Washington St.
Indianapolis, Indiana 46204
317-232-4200

Little Calumet River Project
3001 Leonard Dr.
Suite 104
Valparaiso, Indiana 46383
219-462-7515

NIRPC
6100 Southport Rd.
Portage, Indiana 46368
219-763-6060

National Audubon Society
700 Broadway
New York, NY 10003
212-979-3000

Northwest Territory RC&D
3001 Leonard Drive
Valparaiso, IN 46383-4386
574-462-7515

Save the Dunes
444 Barker Rd.
Michigan City, IN 46360
219-879-3564

Shirley Heinze Environmental Fund
444 Barker Rd.
Michigan City, IN 46360-7426
219-879-4725

The Nature Conservancy
1505 N. Delaware St., Suite 200
Indianapolis, Indiana 46202
317-951-8818

Turkey Creek - Deep River Watershed Management Plan
414 Main St.
Hobart, Indiana 46542
317-254-8235

City of LaPorte Mayor (LaPorte County)
801 Michigan Ave.
LaPorte, IN 46350
219-362-3175

LaPorte County Commissioner (LaPorte County)
County Courthouse
813 Lincolnway, Suite 301
LaPorte, Indiana 46350
219-326-6808

LaPorte County Drainage Board (LaPorte County)
County Courthouse
813 Lincolnway, Suite101
LaPorte, Indiana 46350
219-326-6808

LaPorte County Farm Service Agency (LaPorte County)
100 Legacy Plaza W.
LaPorte, Indiana 46350
219-324-6303

LaPorte County Government Offices (LaPorte County)
County Courthouse
813 Lincolnway
LaPorte, IN 46350
219-326-6808

LaPorte County Parks & Rec (LaPorte County)
County Complex, 3rd Floor
809 State Street
LaPorte, IN 46350
219-326-6808

LaPorte County Purdue Univ. Co-op Extension Service (LaPorte County)
809 State St., Suite 502A
LaPorte, IN 46350
219-326-6808

LaPorte County SWCD (LaPorte County)
100 Legacy Plaza W.
LaPorte, IN 46350
219-324-6303

LaPorte County Surveyor (LaPorte County)
County Courthouse
813 Lincolnway, Suite 101
LaPorte, IN 46350
219-326-6808

LaPorte County USDA-NRCS (LaPorte County)
100 Legacy Plaza W.
LaPorte, IN 46350
219-324-6303

LaPorte Water Works (LaPorte County)
1119 Lake Street
LaPorte, IN 46350
219-362-9540

Laporte County Conservation Trust Inc. (LaPorte County)
405 Maple Ave.
La Porte, IN 46350-3609
219-778-2810

Laporte County Health Department (LaPorte County)
809 State St.
Laporte, IN 46350
219-326-6808

Michigan City Dept. of Water Works (LaPorte County)
111 Lake Shore Drive
Michigan City, IN 46360
219-872-4430

City of Crown Point Mayor (Lake County)
101 Northeast Street
Crown Point, IN 46307
219-662-3240

City of Hobart Mayor (Lake County)
414 Main Street
Hobart, IN 46342
219-942-6112

Crown Point Water Works (Lake County)
1313 E. North St.
Crown Point, IN 46307
219-662-3251

East Chicago Health Department (Lake County)
100 W. Chicago Ave.
East Chicago, IN 46312
219-391-8467

Gary City Health Department (Lake County)
1145 W. 5th Ave.
Gary, IN 46402
219-882-5565

Gary City Mayor (Lake County)
401 Broadway
Gary, Indiana 46402
219-881-1301

Hammond City Health Department (Lake County)
649 Conkey St.
Hammond, IN 46324
219-853-6358

Indiana-American Water Company-Northwest (Lake County)
650 Madison St.
Gary, IN 46401
219-880-2362

Lake County Commissioner (Lake County)
3rd Floor, Building A
2293 N. Main St.
Crown Point , IN 46307
219-755-3200

Lake County Drainage Board (Lake County)
County Government Center
2293 N. Main St.
Crown Point , IN 46307
219-755-3745

Lake County Farm Service Agency (Lake County)
928 S. Court St.
Crown Point, IN 46307
219-663-0588

Lake County Government Office (Lake County)
County Government Center
2293 N. Main St.
Crown Point , IN 46307
219-755-3100

Lake County Health Department (Lake County)
2293 N. Main St.
Crown Point, IN 46307
219-755-3655

Lake County Purdue Univ. Co-op Extension Service (Lake County)
2293 N. Main St.
Crown Point, IN 46307
219-755-3240

Lake County SWCD (Lake County)
928 S. Court St.
Suite C
Crown Point , IN 46307
219-663-0588

Lake County Surveyor (Lake County)
County Government Center
2293 N. Main St.
Crown Point , IN 46307
219-755-3745

Lake County USDA-NRCS (Lake County)
928 S. Court St.
Suite C
Crown Point, IN 46307
219-663-0588

Lincoln Utilities (Lake County)
5180 E 81st Ave.
Merrillville, IN 46410
219-942-2131

Chesterton Utilities (Porter County)
220 Broadway
Chesterton, IN 46304
219-926-1572

City of Valparaiso Mayors Office (Porter County)
166 Lincolnway
Valparaiso, IN 46383
219-462-1161

Lac Utilities (Porter County)
1805 Burlington Beach Rd.
Valparaiso, IN 46383
219-464-3770

Porter County Commissioner (Porter County)
155 Indiana
Valparaiso, IN 46383
219-465-3440

Porter County Drainage Board (Porter County)
155 Indiana
Suite 303
Valparaiso, IN 46383
219-465-3489

Porter County Farm Service Agency (Porter County)
3001 Leonard Dr.
Valparaiso, IN 46383-2733
219-462-7515

Porter County Government Offices (Porter County)
155 Indiana
Valparaiso, IN 46383
219-465-3460

Porter County Health Department (Porter County)
155 Indiana Ave. Rm 104
Valparaiso, IN 46383
219-465-3525

Porter County Purdue Univ. Co-op Extension Service (Porter County)
155 Indiana Ave., Suite 301
Valparaiso, IN 46383
219-465-3555

Porter County SWCD (Porter County)
3001 Leonard Dr.
Valparaiso, IN 46383
219-462-7515

Porter County Surveyor (Porter County)
155 Indiana
Valparaiso, IN 46383
219-465-3560

Porter County USDA-NRCS (Porter County)
3001 Leonard Dr.
Valparaiso, IN 46383
219-462-7515

Shorewood Forest Utilities (Porter County)
229 Shorewood Drive
Valparaiso, IN 46385
219-531-0706

Valparaiso Dept. of Water Works (Porter County)
205 Billings St.
Valparaiso, IN 46383
219-462-8412

Waste Managment of Northwest Indiana (Porter County)
1035 N. State Road 149
Valparaiso, IN 46383
219-763-2502

St. Joseph County Farm Service Agency (St. Joseph County)
St. Joseph Co. Farm Bureau
5605 US 31 S.
South Bend, IN 46614
219-291-7444

St. Joseph County Health Department (St. Joseph County)
227 W. Jefferson Blvd.
Rm 825
South Bend, IN 46601
219-235-9750

St. Joseph County Purdue Univ. Co-op Extension Service (St. Joseph County)
227 W. Jefferson Blvd.
South Bend, IN 46601
219-235-9604

St. Joseph USDA-NRCS (St. Joseph County)
St. Joseph Co. Farm Bureau
5605 US 31 S.
South Bend, IN 46614
219-291-7444

STATE STAKEHOLDERS

Indiana Farm Bureau Inc.
225 S East St
Indianapolis, IN 46202
(317) 692-7851

Indiana Department of Environmental Management
100 N. Senate Ave
P.O. Box 6015
Indianapolis, IN 46206-6015

IDEM Switchboard
(317) 232 8603 or (800) 451 6027

Agricultural Liaison
(317) 232 8587

Air Quality
(317) 233 0178

Community Relations
(317) 233 6648

Compliance and Technical Assistance
(317) 232 8172

Criminal Investigations
(317) 232 8128

Enforcement
(317) 233 5529

Environmental Response
(317) 308 3017

Legal Counsel
(317) 232 8493

Media and Communication Services
(317) 232 8560

Pollution Prevention and Technical Assistance
(317) 232 8172

Solid and Hazardous Waste Management
(317) 233 3656

Water Management
(317) 232 8670

Indiana Department of Natural Resources
402 West Washington Street
Indianapolis, IN 46204 2748

Division of Engineering
(317) 232 4150

Division of Entomology and Plant Pathology
(317) 232 4120

Division of Fish & Wildlife
(317) 232 4080

Division of Forestry
(317) 232 4105

Division of Historic Preservation & Archaeology
(317) 232 1646

Division of Law Enforcement
(317) 232 4010

Division of State Parks and Reservoirs
(317) 232 4124

Division of Water
(317) 232 4160

Division of Public Information and Education
(317) 232 4200

Division of Reclamation
(317) 232 1547

Division of Safety and Training
(317) 232 4145

Division of Soil Conservation
(317) 233 3870

Division of Oil and Gas
(317) 232 4055

Division of Outdoor Recreation
(317) 232 4070

Division of Nature Preserves
(317) 232 4052

Indiana State Department of Health
2 North Meridian St.
Indianapolis, IN 46204
(317) 233 1325

FEDERAL STAKEHOLDERS

Natural Resources Conservation Service
6013 Lakeside Blvd
Indianapolis, In 46278
(317) 290 3200
NRCS Field Representatives are generally located with the SWCD office in each county.

U.S. EPA Region 5
77 West Jackson Blvd
Chicago, IL 60604
(312) 353-2000
(800) 632-8431

U.S. Army Corps of Engineers

Chicago District
111 N. Canal
Chicago, IL 60606
(312) 353-6400

Detroit District
P.O. Box 1027
Detroit, MI 48231-1027
(888) 694-8313

Louisville District
600 Dr. Martin Luther King, Jr.
Louisville, KY 40202
(502) 315-6768

APPENDIX D

FUNDING SOURCES

This listing of funding sources was derived from the May 1999 *Watershed Action Guide for Indiana*, which is available from the Watershed Management Section of IDEM (IDEM 1999b).

FEDERAL CONSERVATION AND WATERSHED PROGRAMS

Environmental Protection Agency

Section 319, 205(j), and 104(b)(3) Grants

Grants for conservation practices, water body assessment, watershed planning, and watershed projects. Available to non-profit or governmental entities. These monies, enabled by the Clean Water Act, are funneled through the Indiana Department of Environmental Management. *For details see IDEM below.*

EPA Great Lakes Program

Numerous sources of funding are available for the area that drains into the Great Lakes. The complete grants guidance and application package for EPA Great Lakes grants is on the web, and additional funding sources are at the Great Lakes Information Network (http://www.great-lakes.net/). Grants are submitted in early spring for most of these sources.

U.S. Department of Agriculture/Natural Resources Conservation Service (NRCS) (See Appendix C for local federal agency contacts.)

CRP: Conservation Reserve Program.

Administered by the Farm Service Agency with technical assistance from NRCS. Conservation easements in certain critical areas on private property. CRP encourages farmers to convert highly erodible cropland or other environmentally sensitive acreage to vegetative cover, such as tame or native grasses, wildlife plantings, trees, filterstrips, or riparian buffers. Easements are for 10 or 15 years, depending on vegetative cover, and compensation payments are made yearly to replace income lost through not farming the land. Cost share is available for planting vegetative cover on restored areas. http://www.fsa.usda.gov/dafp/cepd/crp.htm

EQIP: Environmental Quality Incentive Program.

Administered by the NRCS. Provides technical, financial, and educational assistance. Conservation cost-share program for implementing Best Management Practices, available to agricultural producers who agree to implement a whole-farm plan that addresses major resource concerns. Up to $50,000 over a 5- to 10- year period. Some parts of the state are designated Conservation Priority Areas and receive larger funding allotments. http://www.nhq.nrcs.usda.gov/PROGRAMS/COD/cit/eqipsmry.htm

FIP: Forestry Incentive Program.

Administered by the NRCS. Assists forest management on private lands of at least 10 acres and no more than 1,000 acres. Eligible practices are tree planting, timber stand improvement, site preparation for natural regeneration, and other related activities. Land must be suitable for conversion from nonforest to forest land, for reforestation, or for improved forest management and be capable of producing marketable timber crops. Cost share up to 65%, with a maximum of $10,000 per person per year. http://www.nhq.nrcs.usda.gov/CCS/FB96OPA/FIPfact.html

Small Watershed Program.

The Small Watershed Program works through local government sponsors and helps participants solve natural resource and related economic problems on a watershed basis. Projects include watershed protection, flood prevention, erosion and sediment control, water supply, water quality, fish and wildlife habitat enhancement, wetlands creation and restoration, and public recreation in watersheds of 250,000 or fewer acres. Both technical and financial assistance are available. http://www.ftw.nrcs.usda.gov/pl566/pl566.html

WRP: Wetland Reserve Program.

Administered by the NRCS. Easement and restoration program to restore marginal agricultural land to wetland. Easements may be for 10 years, 30 years, or permanent. Longer easements are preferred. Partnerships with other acquisition programs are encouraged. Restoration and legal costs are paid by NRCS. Landowner retains ownership of the property and may use the land in ways that do not interfere with wetland function and habitat, such as hunting, recreational development, and timber harvesting. http://www.nhq.nrcs.usda.gov/PROGRAMS/wrp/

WHIP:Wildlife Habitat Incentive Program.

Administered by the NRCS. Cost share and technical assistance to develop and improve wildlife habitat on private land. Private landowners who are agricultural producers are eligible. A wildlife habitat plan is developed that describes landowner's goals for improving wildlife habitat, includes a list of practices and schedule for installing them, and details the steps necessary for maintenance. Cost share up to 75%, and contracts are for 10 years. http://www.nhq.nrcs.usda.gov/PROGRAMS/whip/

U.S. Fish & Wildlife Service

Partners for Wildlife Habitat Restoration Program

Provides technical and financial assistance to private landowners through voluntary cooperative agreements in order to restore formerly degraded wetlands, native grasslands, riparian areas, and other habitats to conditions as natural as feasible. Landowners agree to maintain restoration projects as specified in the agreement but otherwise retain full control of the land. Agreements are for fixed term of at least 10 years. No more than 60% of project cost is paid by Federal moneys (the program seeks remainder of cost share from landowners and nationally-based and local entities). http://www.fws.gov/

STATE CONSERVATION AND WATERSHED PROGRAMS

IDNR Division of Soil Conservation

LARE: Lake & River Enhancement Program

Funds diagnostic and feasibility studies in selected watersheds and cost-share programs through local Soil & Water Conservation Districts. Project oversight provided through county-based Resource Specialists and Lake & River Enhancement Watershed Coordinators. Funding requests for Watershed Land Treatment projects must come from Soil & Water Conservation Districts. If a proposed project area includes more than one district, the affected SWCDs should work together to develop an implementation plan. The SWCDs should then apply for the funding necessary to administer the watershed project. Before applying for funding, the SWCDs should contact the Lake & River Enhancement Coordinators to determine (1) the appropriate watershed to include in the project, (2) if the proposed project meets the eligibility criteria, and (3) if funding is available. http://www.in.gov/dnr/soilcons/lare.htm

IDNR Division of Fish & Wildlife

Classified Wildlife Habitat Program

Incentive program to foster private wildlife habitat management through tax reduction and technical assistance. Landowners need 15 or more acres of habitat to be eligible. IDNR provides management plans and assistance through District Wildlife Biologists (see county listings). http://www.ai.org/dnr/fishwild/about/habitat.htm

IDNR Division of Forestry

Classified Forest Program

Incentive program to foster private forest management through tax reduction and technical assistance. Landowners need 10 or more acres of woods to be eligible. IDNR provides management plans and assistance through District Foresters (see county listings). http://www.state.in.us/dnr/forestry/landassist/clasfor.htm

Classified Windbreak Act

Establishment of windbreaks at least 450 feet long adjacent to tillable land. Provides tax incentive, technical assistance through IDNR District Foresters.

Forest Stewardship Program & Stewardship Incentives Program

Cost share and technical assistance to encourage responsibly managed and productive private forests. http://www.state.in.us/dnr/forestry/htmldocs/grants.htm

IDNR Division of Reclamation

Appalachian Clean Streams Initiative

Funds for acid mine drainage abatement.

IDNR Division of Nature Preserves

State Nature Preserve Dedication

Acquisition and management of threatened habitat. http://www.in.gov/dnr/naturepr/

IDEM Office of Water Quality

State Revolving Fund

Available to municipalities and counties for a range of water quality infrastructure projects. Funds are available for a wide variety of projects including all types of nonpoint source management projects, as well as more traditional wastewater treatment projects. Funding is through very low-interest loans. http://www.in.gov/idem/water/fasb/srflp.html

Section 319 Grants - Nonpoint Source Program

Available to nonprofit groups, municipalities, counties, and universities for implementing water quality improvement projects that address nonpoint source pollution concerns. Twenty-five percent match is required, which may be cash or in-kind. Maximum grant amount for local watershed projects is $112,500, but statewide or larger scale projects may be funded up to $300,000. Projects are usually two to three years in length. Projects may be for land treatment through implementing Best Management Practices, for education, and for developing tools and applications for state-wide use. Proposals are due October 1, 2002 for FY2003 funds. See Section 5.1.5 for more details. http://www.in.gov/idem/water/planbr/wsm/index.html

Section 205(j) Grants - Water Quality Management Planning Program

Available to municipalities, counties, conservation districts, drainage districts, and other public organizations. For-profit entities, non-profit organizations, private associations, and individuals are not eligible for funding through Section 205(j). Grants are for water quality management projects such as studies of nonpoint pollution impacts, nonagricultural NPS mapping, and the development and implementation of watershed management projects. Funds can be requested for up to $100,000 and no match is required. http://www.in.gov/idem/water/planbr/wsm/index.html

Section 104(b)(3) Grants - NPDES Related State Grant Program

Provide for developing, implementing and demonstrating new concepts or requirements that will improve the effectiveness of the NPDES permit program. A project proposed for assistance by this program should deal predominantly with water pollution sources and activities regulated by the NPDES program. These may include innovative demonstration projects to promote statewide watershed approaches for permitted discharges, development of storm water management plans by small municipalities, projects involving a watershed approach to municipal separate sewer systems, and projects that directly promote community based environmental protection. Available to State water pollution control agencies, interstate agencies, Tribes, colleges and universities, and other public or nonprofit organizations. For-profit entities, private associations and individuals are not eligible to receive this assistance. Funds can be requested for up to $100,000. Five percent match is required, either cash or in-kind. http://www.in.gov/idem/water/planbr/wsm/index.html

NOTE: proposals are due to IDEM by January 31 annually for projects beginning the following December.

PRIVATE FUNDING SOURCES

National Fish and Wildlife Foundation

1120 Connecticut Avenue, NW Suite 900, Washington DC 20036. (http://www.nfwf.org/programs/grant_apply.htm)

Nonprofit, established by Congress 1984, awards challenge grants for natural resource conservation. Federally appropriated funds are used to match private sector funds. Six program areas include wetland conservation, conservation education, fisheries, migratory bird conservation, conservation policy, and wildlife habitat.

Individual Utilities

Check local utilities such as IPALCO, CINergy, REMC, NIPSCO. Many have grants for educational and environmental purposes (IPALCO Golden Eagle Program - http://www.ipalco.com/ABOUTIPALCO/Environment/Golden_Eagle/2001_Winners.html; CINergy - http://www.cinergy.com/Environment/default.asp).

Indiana Hardwood Lumbermen's Association

Indiana Tree Farm Program. http://www.ihla.org/leaders.htm

Conservation Technology Information Center (CTIC)

'Know Your Watershed' educational materials are available. http://www.ctic.purdue.edu/CTIC/CTIC.html

Ducks Unlimited

Land acquisition and habitat restoration assistance. http://www.ducks.org/

National Wild Turkey Federation

Funds for turkey and wildlife habitat improvement projects. http://www.nwtf.org/

Quail Unlimited

Funds for quail and wildlife habitat improvement projects. http://www.qu.org/

Pheasants Forever

Land acquisition and funds for local habitat improvement projects. http://www.pheasantsforever.org/

Indiana Heritage Trust

Land acquisition programs. http://www.state.in.us/dnr/heritage/

The Nature Conservancy

Land acquisition and restoration. http://nature.org/wherewework/northamerica/states/indiana/

Southern Lake Michigan Conservation Initiative

Blue River Focus Area

Kankakee Sands Focus Area

Upper St. Joseph River Focus Area

Tippecanoe River Focus Area

Natural Areas Registry

Hoosier Landscapes Capitol Campaign

Local/Regional Land Trusts

Land acquisition, conservation easements, and restoration

Acres Inc. (Fort Wayne, IN)

- http://www.acres-land-trust.org/

Buffalo Trace Land Trust, LLC (Mount Saint Francis, IN)

Central Indiana Land Trust, Inc. (Indianapolis, IN)

- http://www.cilti.org/

Clark's Valley Land Trust (Charlestown, IN)

- http://www.clarkswcd.org/LandTrust/LandTrusthome.htm

Indiana Karst Conservancy (Indianapolis, IN)

- http://www.caves.org/conservancy/ikc/

Laporte County Conservation Trust Inc. (La Porte, IN)

Little River Wetlands Project (Ft. Wayne, IN)

- http://www.lrwp.org/

Mud Creek Conservancy (Indianapolis, IN)

- http://www.mudcreekconservancy.org/

NICHES Land Trust (Lafayette, IN)

- http://dcwi.com/~niches/

Ohio River Conservancy (Bloomington, IN)

Oxbow, Inc. (Cincinnati, OH)

- http://math.uc.edu/~pelikan/OXBOW/wm.html

Red-tail Conservancy, Inc. (Muncie, IN)

- http://ourworld.cs.com/rtconserv1/id18.htm

River Fields, Inc. (Louisville, KY)

- http://www.riverfields.org/

Shirley Heinze Environmental Fund (Michigan City, IN)

- http://www.heinzefund.org/

Sycamore Land Trust (Bloomington, IN)

- http://www.sycamorelandtrust.org/

Wabash Heritage Land Trust (New Harmony, IN)

Wawasee Area Conservancy Foundation (Syracuse, IN)

- http://www.wacf.com/

Whitewater Valley Land Trust, Inc. (Centerville, IN)

Wood-Land-Lakes Resource Conservation & Development (Kendallville, IN)

- http://www.in.nrcs.usda.gov/conservation%20programs/rcd/woodland_lakes.htm

SOURCES OF ADDITIONAL FUNDING OPPORTUNITIES

Catalog of Federal Funding Sources for Watershed Protection

EPA Office of Water (EPA841-B-99-003) December 1999

Little Calumet-Galien Watershed Restoration Action Strategy

(http://www.epa.gov/owow/watershed/wacademy/fund.html)

GrantsWeb:

http://www.srainternational.org/cws/sra/resource.htm

APPENDIX E

Superfund (CERCLA) Site Fact Sheets

for sites listed within the Little Calumet-Galien watershed

AMERICAN CHEMICAL SERVICE, INC.

Site Information:

Site Name: AMERICAN CHEMICAL SERVICE, INC.

Address: 420 SOUTH COLFAX AVENUE
GRIFFITH, IN 46319

EPA ID: IND016360265

EPA Region: 05

County: 089 LAKE

Latitude: +41.514200

Longitude: -087.419100

NPL Status: Currently on the Final NPL

Non-NPL Status:

Federal Facility Flag: Not a Federal Facility

Incident Category: Chemical Plant

Record of Decision (ROD) List:

	ROD ID	ROD Date	OU
1	EPA/ROD/R05-92/217	09/30/1992	01
2	EPA/541/R-99/071	07/27/1999	01

1) Record of Decision (ROD):

Operable Unit: 01

ROD ID: EPA/ROD/R05-92/217

ROD Date: 09/30/1992

Media: Debris, Ground Water, Soil

Contaminant: VOCs, Other Organics, Metals

Abstract: SITE HISTORY/DESCRIPTION: The 36-acre American Chemical Services (ACS) site is a chemical manufacturing facility in Griffith, Indiana, which was formerly involved in solvent recovery. Land use in the area is predominantly residential and industrial with a wetlands area located north of the Chesapeake and Ohio railway on the west of the site. Nine upper aquifer wells and 16 lower aquifer wells are located within 1/2 mile of the site, with area residents using most of the lower aquifer wells for drinking water. From the late 1960's to early 1970's, ACS manufactured barium naphtherate, brominated vegetable oil, lacquers and paints, liquid soldering fluid, and polyethylene solutions in polybutene. Two onsite incinerators burned still bottoms, nonreclaimable materials generated from the site,and offsite wastes; however, in the 1970's, the incinerators were dismantled, the shells were cut up and scrapped, and the burners and blowers remain onsite. From 1970 to 1975, batch manufacturing expanded, and additives, lubricants, detergents, and soldering flux were manufactured. In 1980, a 31 - acre part of the property to the west of the offsite containment area was sold to the City of Griffith to expand the City's municipal landfill. Solvent recovery operations continued until 1990 when ACS lost interim status under RCRA regulations because of failure to obtain required insurance policies. Three identified disposal areas on the ACS property are the Onsite Containment Area, where approximately 400 drums containing sludge and semi-solids of unknown types were reportedly disposed of; the Still Bottoms, Treatment Lagoon #1, and adjacent areas, which received still bottoms from the solvent recovery process, including a pond and lagoon that were taken out of service in 1972, drained, and filled with

an estimated 3,200 drums containing sludge materials; and the Offsite Containment Area and Kapica/Pazmey property, which was used as a waste disposal area and received wastes that included onsite incinerator ash, general refuse, a tank truck containing solidified paint, and an estimated 20,000 to 30,000 drums that were reportedly punctured prior to disposal. Disposal practices in the Offsite Containment Area ceased in 1975. This ROD addresses a final remedy for the buried drums, as well as waste, contaminated soil, debris, and ground water. The primary contaminants of concern affecting the soil, debris, and ground water are VOCs, including benzene, TCE, toluene, and xylenes; other organics, including PCBs, PAHs, and phenols; and metals, including arsenic, chromium, and lead. PERFORMANCE STANDARDS OR GOALS: Chemical-specific soil clean-up goals are based on risk-based levels and include benzene 1.0 mg/kg; toluene 167-5,000 mg/kg;xylenes 867-26,000 mg/kg; PCBs 10 mg/kg (with 10-inch soil cover); chromium 47-1,400 mg/kg; and lead500 mg/kg. The lead clean-up level for soil is based on the Interim Guidance on Establishing Soil Lead Cleanup Levels at Superfund Sites and the PCB clean-up level for soil is based on TSCA policy for unrestricted access. Chemical-specific ground water clean-up goals are based on riskbased levels, SDWA MCLs, and benzene 5 ug/l; PCE 5 ug/l; PCBs 0.06 ug/l; and arsenic 8.8 ug/l. INSTITUTIONAL CONTROLS: Institutional controls may be implemented in the form of deed restrictions, and site access restrictions such as fencing, to provide protection from contaminants until clean-up standards are met.

Remedy: SELECTED REMEDIAL ACTION: The selected remedial action for this site includes excavation and offsite incineration of approximately 400 intact buried drums, decontaminating and disposing of miscellaneous debris offsite;treating contaminated soil using in-situ vapor extraction; conducting an in-situ vapor extraction pilot study for Onsite Area buried waste; excavating and treating buried waste or PCB-contaminated soil onsite using low temperature thermal treatment, with vapor emission control during excavation, and possible immobilization of inorganics after treatment; depositing the treated residuals that meet healthbased levels onsite and covering the area with a soil cover; pumping and onsite treatment of contaminated ground water along with wash water from the decontamination processes and condensate from the soil treatment processes using a method to be determined during the RD phase, with onsite discharge of the treated water to surface water and wetlands; continuing to evaluate and monitor wetlands, with mitigation of affected wetlands if necessary; controlling and monitoring air emissions from excavation and treatment processes; conducting longterm ground water monitoring; and implementing, to the extent possible, institutional controls including deed restrictions, and site access restrictions such as fencing. The estimated present worth cost for this remedial action ranges from $37,800,000 to $46,800,000, which includes an annual O&M cost of$17,670,000 for 30 years.

2) Record of Decision (ROD):

Operable Unit: 01

ROD ID: EPA/541/R-99/071

ROD Date: 07/27/1999

Media: Groundwater, Sediment, Soil

Abstract: Please note that the text in this document summarizes the Record of Decision for the purposes of facilitating searching and retrieving key text on the ROD. It is not the officially approved abstract drafted by the EPA Regional offices. Once EPA Headquarters receives the official abstract, this text will be replaced.

The American Chemical Service (ACS) Site is located at 420 S. Colfax Ave., Griffith, Indiana. The site is 19 acres and consists of the "Offsite" and "Onsite" Containment Areas, the 2-acre "Kapica-Pazmey" property, and a 15-acre portion of the Griffith Municipal Landfill. Groundwater contaminant plumes emanate from the ACS site, and site wastes have impacted certain nearby wetland areas.

Since 1955, a solvent recovery business - American Chemical Service Corporation (ACSC) - has been located on this site. Past waste handling, storage and disposal practices led to contamination of the site. ACSC lost its interim (authorization to operate) status under Resource Conservation and Recovery Act (RCRA) in 1990, but it still maintains its specialty chemical manufacturing operations.

A Record of Decision (ROD) was completed in September 1992 that addressed the site. A Record of Decision (ROD) Amendment was completed in July 1999.

Remedy: Soil contaminants will be contained on site by surrounding the site with a subsurface barrier wall, capping the site and withdrawing groundwater inside the barrier wall. Volatile organic compound-laden soil will be treated by a Soil Vapor Extraction system. Polychlorinated biphenyl (PCB)-laden sediments in site wetlands will be excavated to achieve cleanup level of 1mg/kg to depth. Excavated sediments containing less than 50 mg/kg PCBs will be disposed of offsite at a Toxic Substances Control Act compliant facility. The wetlands will be restored. A deed restriction will be maintained on the site. In addition, EPA will be gathering offsite groundwater data to determine whether contaminants may be addressed through monitored natural attentuation, and to determine whether enhanced bioremediation is appropriate in discreet areas. EPA may initiate a second Record of Decision amendment if necessary.

URL: http://www.epa.gov/superfund/sites/rodsites/0501376.htm
This page was last updated on: April 15, 2002
Site maintained by: Office of Emergency and Remedial Response
brown.margret@epa.gov

LAKE SANDY JO (M&M LANDFILL)

Site Information:

Site Name: LAKE SANDY JO (M&M LANDFILL)
Address: 3615 WEST 25TH AVENUE
GARY, IN 46404

EPA ID: IND980500524
EPA Region: 05
County: 089 LAKE

Latitude: +41.570839
Longitude: -087.382231

NPL Status: Currently on the Final NPL
Non-NPL Status:
Federal Facility Flag: Not a Federal Facility
Incident Category: Landfill

Record of Decision (ROD) List:

	ROD ID	ROD Date	OU
1	EPA/ROD/R05-86/043	09/26/1986	01

1) Record of Decision (ROD):

Operable Unit: 01
ROD ID: EPA/ROD/R05-86/043
ROD Date: 09/26/1986

Media: GROUNDWATER SEDIMENTS SOIL

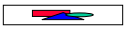
Contaminant: HEAVY METALS, PAHS, PHTHALATES

Abstract: THE LAKE SANDY JO SITE IS LOCATED ON THE SOUTHEAST SIDE OF THE CITY OF GARY IN LAKE COUNTY, INDIANA. THE SITE WAS A FORMER 40-ACRE WATER-FILLED BORROW PIT THAT WAS USED AS A LANDFILL BETWEEN 1971 AND 1980. VARIOUS WASTES INCLUDING CONSTRUCTION AND DEMOLITION DEBRIS, GARAGE AND INDUSTRIAL WASTES, AND DRUMS ARE BELIEVED TO BE IN THE SITE. THE AREA SURROUNDING THE SITE IS PRIMARILY LOW DENSITY RESIDENTIAL PROPERTY. THE BORROW PIT ON THE SITE WAS ORIGINALLY DUG TO SUPPORT CONSTRUCTION OF I-90/84, WHICH IS ADJACENT TO THE SITE. IN 1971 THE PIT WAS FILLED WITH GROUND WATER AND WAS USED FOR A SHORT TIME AS A RECREATIONAL LAKE. BETWEEN 1971 AND 1975 THE PIT WAS FILLED WITH VARIOUS DEBRIS. COMPLAINTS WERE FILED BY LOCAL RESIDENTS ABOUT ODORS EMANATING FROM THE SITE, AND IN 1976 THE OWNERS WERE ORDERED TO DRAIN THE LAKE AND RESTRICT FILL TO DEMOLITION DEBRIS ONLY. LATER IN 1976 THE SITE WAS SOLD TO GLEN AND GORDON MARTIN, WHO CONTINUED FILLING OPERATIONS WITHOUT A PERMIT UNTIL THE SITE WAS CLOSED IN 1980. THE PRIMARY CONTAMINANTS OF CONCERN ARE PAHS, PHTHALATES AND HEAVY METALS, FOUND MAINLY IN SOILS.

THE SELECTED REMEDIAL ACTION FOR THIS SITE INCLUDES; INSTALLATION OF A SOIL COVER OVER THE LANDFILL WITH A DRAINAGE BLANKET TO CONTROL SURFACE SEEPS; EXTENSION OF WATER MAINS TO AFFECTED RESIDENTS IN GARY; ONSITE CONSOLIDATION OF CONTAMINATED SEDIMENTS; GROUND WATER AND SURFACE WATER/SEDIMENT MONITORING; AND DEED RESTRICTIONS ON LANDFILLED PROPERTY AND INSTITUTIONAL CONTROLS ON AQUIFER USE. THE ESTIMATED CAPITAL COST OF THE REMEDY IS $4,747,000 WITH ANNUAL O&M COSTS OF $63,000.

Remedy: - INSTALLATION OF A SOIL COVER OVER THE LANDFILL WITH A DRAINAGE BLANKET TO CONTROL SURFACE SEEPS.
- EXTENSION OF WATER MAINS FROM THE GARY-HOBART WATER DISTRIBUTION SYSTEM INTO THE COMMUNITY NORTH OF 29TH AVENUE, SOUTH OF 25TH AVENUE BETWEEN MORTON AND CHASE STREETS IN GARY.
- ONSITE CONSOLIDATION OF CONTAMINATED SEDIMENTS.
- GROUND WATER MONITORING ON A QUARTERLY BASIS AND SURFACE WATER/SEDIMENT AND SUPPLEMENTAL GROUND WATER MONITORING ON A SEMI-ANNUALLY BASIS.
- DEED RESTRICTIONS ON LANDFILL PROPERTY AND INSTITUTIONAL CONTROLS ON AQUIFER USE IN THE AFFECTED AREAS.

URL: http://www.epa.gov/superfund/sites/rodsites/0501630.htm
This page was last updated on: January 25, 2002
Site maintained by: Office of Emergency and Remedial Response
brown.margret@epa.gov



MIDCO I

Site Information:

Site Name: MIDCO I

Address: 7400 W 15TH AVE
GARY, IN 46401

EPA ID: IND980615421

EPA Region: 05

County: 089 LAKE

Latitude: +41.589500

Longitude: -087.428400

NPL Status: Currently on the Final NPL

Non-NPL Status:

Federal Facility Flag: Not a Federal Facility

Incident Category: Industrial Waste Treatment

Record of Decision (ROD) List:

	ROD ID	ROD Date	OU
1	EPA/ROD/R05-89/092	06/30/1989	01
2	EPA/AMD/R05-92/196	04/13/1992	01

1) Record of Decision (ROD):

Operable Unit: 01

ROD ID: EPA/ROD/R05-89/092

ROD Date: 06/30/1989

Media: SOIL SEDIMENT GROUNDWATER

Contaminant: VOCS, BENZENE, TOLUENE, TCE, PCBS, PAHS, PHENOLS, CHROMIUM, LEAD

Abstract: THE MIDCO I SITE IS A FOUR-ACRE, ABANDONED INDUSTRIAL WASTE RECYCLING, STORAGE, AND DISPOSAL FACILITY IN GARY, INDIANA. THE SURROUNDING AREA IS PARTIALLY RURAL, INCLUDING WETLANDS. RESIDENTIAL NEIGHBORHOODS LIE TO THE WEST, SOUTH, AND EAST, WITH SOME RESIDENTS LIVING AS CLOSE AS 900 FEET FROM THE SITE. TWELVE DRINKING WATER WELLS HAVE BEEN IDENTIFIED WITHIN APPROXIMATELY ONE MILE OF THE SITE. THE CALUMET AQUIFER, ONE OF THE TWO MAJOR AQUIFERS UNDERLYING THE SITE AND PROVIDING WATER TO THESE WELLS, IS HIGHLY SUSCEPTIBLE TO CONTAMINATION FROM SURFACE SOURCES. RECYCLING, STORING, AND DISPOSING OF INDUSTRIAL WASTES BEGAN AT THE SITE SOMETIME BEFORE JUNE 1973. WITHIN A THREE-YEAR PERIOD, THE SITE OWNERS ACCEPTED AND STOCKPILED APPROXIMATELY 6,000-7,000 55-GALLON DRUMS CONTAINING BULK LIQUID WASTE, AND 4 BULK TANKS, EACH 4,000-10,000 GALLONS. THE FACILITY CLOSED IN DECEMBER 1976 AFTER A FIRE BURNED APPROXIMATELY 14,000 DRUMS OF CHEMICAL WASTE. OPERATIONS RESUMED IN OCTOBER 1977 UNDER NEW OWNERSHIP. BY FEBRUARY 1979 THE NEW OWNERS ABANDONED THE FACILITY, LEAVING THOUSANDS OF DRUMS AND WASTE CHEMICALS UNATTENDED. BY JANUARY 1980 AN ESTIMATED 14,000 DRUMS WERE STILL STOCKPILED ONSITE. IN JUNE 1981 SEVERE FLOODING CAUSED WATER IN THE AREA TO DRAIN WEST INTO A NEIGHBORING CITY; CONTACT WITH THE FLOOD WATER REPORTEDLY RESULTED IN SKIN BURNS. IN 1982 EPA INITIATED A SURFACE REMOVAL ACTION WHICH INCLUDED REMOVING EXTENSIVE SURFACE WASTES, AN UNDERGROUND TANK, AND THE TOP ONE FOOT OF CONTAMINATED SOIL. BECAUSE THESE ACTIVITIES DID NOT ADDRESS THE CONTAMINATED SUBSURFACE SOIL, SEDIMENT, AND GROUND WATER, EPA HAS INITIATED THIS FIRST REMEDIAL ACTION TO ADDRESS THE ABOVE-REFERENCED CONTAMINATED MEDIA. THE PRIMARY CONTAMINANTS OF CONCERN AFFECTING THE SOIL, SEDIMENT, AND GROUND WATER ARE VOCS INCLUDING BENZENE, TOLUENE, AND TCE; OTHER ORGANICS INCLUDING PCBS, PHENOLS, AND PAHS; AND METALS INCLUDING CHROMIUM AND LEAD.

THE SELECTED REMEDIAL ACTION FOR THIS SITE INCLUDES EXCAVATION AND TREATMENT OF 12,400 YD3 OF CONTAMINATED SOIL AND SUBSURFACE MATERIALS USING A COMBINATION OF VAPOR EXTRACTION AND SOLIDIFICATION STABILIZATION, FOLLOWED BY ONSITE DISPOSAL; EXCAVATION AND ONSITE SOLIDIFICATION

STABILIZATION OF APPROXIMATELY 1,200 YD3 OF CONTAMINATED SEDIMENT IN SURROUNDING WETLANDS; COVERING THE SITE IN ACCORDANCE WITH RCRA LANDFILL CLOSURE REQUIREMENTS; GROUND WATER PUMPING AND DEEP WELL INJECTION IN A CLASS I WELL IF EPA GRANTS A PETITION TO ALLOW LAND DISPOSAL OF WASTE PROHIBITED UNDER RCRA; IF A PETITION IS NOT APPROVED, GROUND WATER WILL BE TREATED USING AIR STRIPPING AND A LIQUID-PHASE GRANULAR ACTIVATED CARBON POLISH SYSTEM TO MEET EPA REQUIREMENTS (LDR TREATMENT STANDARDS), FOLLOWED BY DEEP WELL INJECTION OR REINJECTION INTO THE AQUIFER; GROUND WATER MONITORING; AND IMPLEMENTATION OF DEED AND ACCESS RESTRICTIONS. THE ESTIMATED PRESENT WORTH COST FOR THIS REMEDIAL ACTION IS $13,989,000, WHICH INCLUDES ANNUAL O&M COSTS OF $525,000, IF GROUND WATER IS TREATED; OR $10,728,000, WHICH INCLUDES ANNUAL O&M COSTS OF $188,000, IF GROUND WATER IS NOT TREATED.

Remedy: THIS IS THE FINAL REMEDIAL ACTION FOR THE MIDCO I. A SURFACE REMOVAL ACTION INCLUDING REMOVAL AND OFF-SITE DISPOSAL OF WASTES IN DRUMS AND SUB-SURFACE TANKS AND THE TOP ONE FOOT OF CONTAMINATED SOIL WAS COMPLETED IN 1982. THE FINAL REMEDIAL ACTION WILL TREAT THE HIGHLY CONTAMINATED SUBSURFACE SOILS AND MATERIALS THAT REMAIN AT THE SITE AND THAT ARE CONTRIBUTING TO GROUND WATER AND SURFACE WATER CONTAMINATION NEAR THE SITE, AND WILL TREAT THE HIGHLY CONTAMINATED GROUND WATER NEAR THE SITE. THESE ACTIONS WILL ADDRESS THE PRINCIPAL THREATS POSED BY THE SITE WHICH INCLUDE PUBLIC HEALTH RISKS DUE TO FUTURE DEVELOPMENT OF THE SITE, PUBLIC HEALTH RISKS DUE TO OFF-SITE MIGRATION OF GROUND WATER AND, PUBLIC RISKS DUE TO AIR EMISSIONS, AND ENVIRONMENTAL IMPACTS ON SURROUNDING WETLANDS.

THE MAJOR COMPONENTS OF THE SELECTED REMEDIAL ACTIONS INCLUDE:

* ON-SITE TREATMENT OF AN ESTIMATED 12,400 CUBIC YARDS OF CONTAMINATED SOIL AND WASTE MATERIAL BY A COMBINATION OF VAPOR EXTRACTION AND SOLIDIFICATION/STABILIZATION FOLLOWED BY ON-SITE DEPOSITION OF THE SOLIDIFIED MATERIAL. THE SOIL VAPOR EXTRACTION SYSTEM WILL BE CONSIDERED SUCCESSFUL WHEN VOLATILE ORGANIC COMPOUNDS ARE REDUCED TO LEVELS THAT WILL POSE NO HEALTH THREAT AND ALLOW SOLIDIFICATION/STABILIZATION TO PROCEED SUCCESSFULLY. THE SOLIDIFICATION/STABILIZATION OPERATION WILL BE CONSIDERED SUCCESSFUL WHEN IT REDUCES THE MOBILITY OF CONTAMINANTS SO THAT LEACHATE FROM THE SOLID MASS WILL NOT CAUSE EXCEEDANCE OF HEALTH BASED LEVELS IN THE GROUND WATER.

* EXCAVATION AND ON-SITE SOLIDIFICATION/STABILIZATION OF APPROXIMATELY 1200 CUBIC YARDS OF CONTAMINATED SEDIMENTS IN SURROUNDING WETLANDS;

* INSTALLATION AND OPERATION OF A GROUND WATER PUMPING SYSTEM TO INTERCEPT CONTAMINATED GROUND WATER FROM THE SITE;

* INSTALLATION AND OPERATION OF A DEEP, CLASS I, UNDERGROUND INJECTION WELL FOR DISPOSAL OF THE CONTAMINATED GROUND WATER; OR IF A NO-MIGRATION PETITION IS DISAPPROVED BY US EPA, INSTALLATION AND OPERATION OF A TREATMENT SYSTEM FOR THE CONTAMINATED GROUND WATER TO REMOVE HAZARDOUS SUBSTANCES FOLLOWED BY DEEP WELL INJECTION OF THE SALT-CONTAMINATED WATER; OR INSTALLATION AND OPERATION OF A TREATMENT SYSTEM FOR THE CONTAMINATED GROUND WATER TO REMOVE HAZARDOUS SUBSTANCES FOLLOWED BY REINJECTION OF THE SALT-CONTAMINATED GROUND WATER INTO THE CALUMET AQUIFER IN A MANNER THAT WILL PREVENT SPREADING OF THE SALT PLUME;

* INSTALLATION OF A FINAL SITE COVER SATISFYING RCRA CLOSURE REQUIREMENTS, IF APPLICABLE OR IF CONSIDERED RELEVANT AND APPROPRIATE (THE QUALITY OF CAP REQUIRED WILL ALSO DEPEND ON THE RESULTS OF TESTS ON THE SOLIDIFIED MATERIAL);

* RESTRICTION OF SITE ACCESS AND IMPOSITION OF DEED RESTRICTIONS AS APPROPRIATE;

* RELATED TESTING AND LONG TERM MONITORING.

THE GROUNDWATER TREATMENT AND UNDERGROUND INJECTION PORTIONS OF THE REMEDIAL ACTION MAY BE COMBINED WITH THE REMEDIAL ACTION FOR MIDCO II. IN THIS CASE, THE COMBINED TREATMENT CONSTITUTES AN ON-SITE ACTION, FOR PURPOSES OF THE OFF-SITE POLICY.

2) Record of Decision (ROD):

Operable Unit: 01

ROD ID: EPA/AMD/R05-92/196

ROD Date: 04/13/1992

Media: Subsurface Soil, Sediment, Groundwater

Contaminant: VOCS, Metals, Inorganics

Abstract: SITE HISTORY/DESCRIPTION: The 4-acre MIDCO I site is an abandoned, industrial waste recycling, storage, and disposal facility in Gary, Indiana. The surrounding land use is mixed industrial, commercial, and residential. The nearest residential area is about 1/4-mile west of the site. The Calumet Aquifer underlies the site and provides drinking water to wells within 1 mile of the site. From 1973 to 1979, two different owners operated the facility and stockpiled thousands of drums of bulk liquid and chemical waste. In 1976, a fire at the site destroyed an estimated 14,000 waste drums. In 1981, EPA installed a fence around the site. In 1982, EPA removed all surface wastes, including thousands of drums and an underground storage tank; excavated and disposed of contaminated surface soil;and placed a clay cover over much of the site. This ROD amends a 1989 ROD that addressed the remaining contaminated soil and ground water by treatment of an estimated 12,400 cubic yards of soil using soil vapor extraction and

solidification/stabilization, followed by onsite disposal; excavation and solidification/stabilization of an estimated 1,200 cubic yards of contaminated sediments, followed by onsite disposal; and covering the site in accordance with RCRA landfill closure requirements; ground water pumping and injection into a shallow or deep aquifer. The amended remedy reduces the estimated amount of soil to be treated, as a result of new information on arsenic data and amended soil CALs; further defines the site cover requirements; and further defines the requirements of deep well injection of contaminated ground water. The primary contaminants of concern affecting the subsurface soil, sediment, and ground water are VOCs, including TCE, toluene, and xylenes; metals, including chromium and lead; and inorganics. PERFORMANCE STANDARDS OR GOALS: Ground water clean-up standards for the Calumet Aquifer are not changed from the 1989 ROD. Treatment requirements prior to DWI are further defined compared to the 1989 ROD and include, at a minimum, treatment to MACs, which are required for RCRA delisting. Specific MACs include methylene chloride 31.5 ug/l; trichloroethene 31.5 ug/l; toluene 6,300 ug/l; chromium 630 ug/l; nickel 630 ug/l; and lead 950 ug/l. Treatment below MACs will be required, if necessary, to protect underground sources of drinking water. Soil treatment action levels are increased from 1x10[-6] and HI = 1 in the 1989 ROD to 5x10[-4] and HI = 5 in this amendment INSTITUTIONAL CONTROLS: Institutional controls including access and deed restrictions will be implemented to protect the integrity of the site cover and operational aspects of the remedy.

Remedy: SELECTED REMEDIAL ACTION: The amended remedial action for this site includes reducing theamount of soil to be treated to a minimum of 5,200 cubic yards because of the amendment to soil CALs and the determination that arsenic may not be present above background levels at the site; treating thecontaminated soil onsite using with soil vapor extraction, followed by in- situ solidification/stabilization; excavating and treating an estimated 500 cubic yards of contaminated sediment from the surrounding wetlands onsite using solidification/stabilization; pumping and treatment of contaminated ground water using air stripping and carbon absorption, followed by onsite deep well injection; constructing a final RCRA cover over the entire site; implementing institutional controls including deed restrictions, and site access restrictions; conducting long-term monitoring and providing for a contingency remedy in the event that ground water clean-up action levels for the Calumet Aquifer are technically impracticable to attain, which includes low-level pumping to contain contaminated ground water and additional institutional controls. The ground water treatment or underground injection portions of this remedy may be combined with remedial actions for the nearby Midco II site. The estimated present worth cost for this amended remedial action is $10,000,000, which includes an annual O&M cost of $460,000.

URL: http://www.epa.gov/superfund/sites/rodsites/0501799.htm
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Site maintained by: Office of Emergency and Remedial Response
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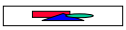

MIDCO II

Site Information:

Site Name: MIDCO II

Address: 5900 INDUSTRIAL HIGHWAY
GARY, IN 46406

EPA ID: IND980679559

EPA Region: 05

County: 089 LAKE

Latitude: +41.622781

Longitude: -087.408611

NPL Status: Currently on the Final NPL

Non-NPL Status:

Federal Facility Flag: Not a Federal Facility

Incident Category: Industrial Waste Treatment

Record of Decision (ROD) List:

	ROD ID	ROD Date	OU
1	EPA/ROD/R05-89/093	06/30/1989	01
2	EPA/AMD/R05-92/193	04/13/1992	01

1) Record of Decision (ROD):

Operable Unit: 01

ROD ID: EPA/ROD/R05-89/093

ROD Date: 06/30/1989

Media: SOIL SEDIMENT GROUNDWATER

Contaminant: VOCS, BENZENE, TOLUENE, TCE, XYLENES, PCBS, ARSENIC, CHROMIUM, LEAD

Abstract: THE MIDCO II SITE IS A SEVEN-ACRE STORAGE AND DISPOSAL FACILITY IN GARY, INDIANA. THE SURROUNDING AREA IS PREDOMINANTLY USED FOR INDUSTRIAL PURPOSES, AND INCLUDES 34 OTHER POTENTIAL HAZARDOUS WASTE SITES. THE UNDERLYING AQUIFER IS HIGHLY SUSCEPTIBLE TO CONTAMINATION FROM SURFACE SOURCES BECAUSE OF THE HIGH WATER TABLE; HOWEVER, IN THE VICINITY OF THE SITE, THE AQUIFER IS USED PRIMARILY FOR NON-DRINKING WATER PURPOSES. THE SAME OPERATOR AS AT ANOTHER SUPERFUND SITE, MIDCO I, BEGAN WASTE OPERATIONS, INCLUDING DRUM STORAGE AT MIDCO II DURING THE SUMMER OF 1976. FOLLOWING A MAJOR FIRE AT THE MIDCO I SITE IN JANUARY 1977, MIDCO TRANSFERRED THE OPERATIONS FROM THE MIDCO I SITE TO THE MIDCO II SITE. OPERATIONS INCLUDED TEMPORARILY STORING BULK LIQUID AND DRUM WASTES; NEUTRALIZING ACIDS AND CAUSTICS; AND DISPOSING OF WASTES BY DUMPING WASTES INTO ONSITE PITS, WHICH ALLOWED WASTES TO PERCOLATE INTO THE GROUND WATER. ONE OF THESE PITS, THE FILTER PIT, HAD AN OVERFLOW PIPE LEADING INTO A DITCH, WHICH DRAINED INTO THE NEARBY GRAND CALUMENT RIVER. BY APRIL 1977 APPROXIMATELY 12,000 TO 15,000 55-GALLON DRUMS OF WASTE MATERIALS WERE STORED ONSITE. ADDITIONALLY, AN ESTIMATED TEN BADLY DETERIORATED AND LEAKING TANKS WERE HOLDING WASTES INCLUDING OILS, OIL SLUDGES, CHLORINATED SOLVENTS, PAINT SOLVENTS, PAINT SLUDGES, ACIDS, AND SPENT CYANIDES. IN AUGUST 1977 A FIRE AT THE SITE DESTROYED 50,000 TO 60,000 DRUMS. ALTHOUGH MOST DRUMS WERE BADLY DAMAGED A SUBSTANTIAL NUMBER OF DRUMS, INCLUDING 75 TO 100 DRUMS CONTAINING CYANIDE, SURVIVED THE FIRE. EPA CONDUCTED A PRELIMINARY INVESTIGATION RESULTING IN THE INSTALLATION OF A 10-FOOT HIGH FENCE AROUND THE SITE. IN 1984 AND 1985 EPA CONDUCTED EMERGENCY REMOVAL ACTIVITIES INCLUDING REPAIRING AND EXTENDING THE SITE FENCE; REMOVING MOST OF THE REMAINING DRUMS, TANKS, AND DEBRIS FROM THE SITE'S SURFACE; AND REMOVING THE SLUDGE PITS AND FILTER PIT CONTENTS. THE RESULTING PCB-CONTAMINATED SOIL PILE WAS REMOVED AND DISPOSED OF IN AN OFFSITE HAZARDOUS WASTE LANDFILL IN EARLY 1986, AND MOST OF THE CYANIDE-CONTAMINATED PILE WAS ALSO REMOVED. REMOVAL ACTIVITIES ENDED IN JANUARY 1986. THE PRIMARY CONTAMINANTS OF CONCERN CURRENTLY AFFECTING THE SOIL, SEDIMENT, AND GROUND WATER ARE VOCS INCLUDING BENZENE, TOLUENE, TCE, AND XYLENES; OTHER ORGANICS INCLUDING PCBS; AND METALS INCLUDING ARSENIC, CHROMIUM, AND LEAD.

THE SELECTED REMEDIAL ACTION FOR THIS SITE INCLUDES EXCAVATION AND TREATMENT OF 35,000 YD3 OF CONTAMINATED SOIL AND WASTE MATERIALS USING SOLIDIFICATION/STABILIZATION FOLLOWED BY ONSITE DISPOSAL; EXCAVATION AND

ONSITE SOLIDIFICATION/STABILIZATION OF 500 YD3 OF CONTAMINATED SEDIMENT; COVERING THE SITE IN ACCORDANCE WITH RCRA LANDFILL CLOSURE REQUIREMENTS; GROUND WATER PUMPING AND DEEP WELL INJECTION IN A CLASS I WELL IF EPA GRANTS A PETITION TO ALLOW LAND DISPOSAL OF WASTE PROHIBITED UNDER RCRA; IF A PETITION IS NOT APPROVED, GROUND WATER WILL BE TREATED USING AIR STRIPPING AND A LIQUID PHASE GRANULAR ACTIVATED CARBON POLISH SYSTEM TO MEET EPA REQUIREMENTS (LDR TREATMENT STANDARDS), FOLLOWED BY DEEP WELL INJECTION OR REINJECTION INTO THE AQUIFER; GROUND WATER MONITORING; AND IMPLEMENTING DEED AND ACCESS RESTRICTIONS. THE GROUND WATER TREATMENT AND UNDERGROUND INJECTION PORTIONS OF THE REMEDIAL ACTION MAY BE COMBINED WITH THE REMEDIAL ACTION FOR MIDCO I. THE ESTIMATED PRESENT WORTH COST FOR THE REMEDIAL ACTION IS $18,596,400, WHICH INCLUDES ANNUAL O&M COST OF $733,000, IF GROUND WATER IS TREATED; OR $14,419,000, WHICH INCLUDES ANNUAL O&M COSTS OF $301,000, IF GROUND WATER IS NOT TREATED.

Remedy: THIS IS THE FINAL REMEDIAL ACTION FOR THE MIDCO II. A SURFACE REMOVAL ACTION INCLUDING REMOVAL AND OFF-SITE DISPOSAL OF WASTES IN DRUMS AND SUB-SURFACE MATERIALS IN THE FORMER SLUDGE PIT AND FILTER BED HAS BEEN COMPLETED BY US EPA. THE FINAL REMEDIAL ACTION WILL TREAT THE HIGHLY CONTAMINATED SUBSURFACE SOILS AND MATERIALS THAT REMAIN AT THE SITE AND THAT ARE CONTRIBUTING TO GROUND WATER AND SURFACE WATER CONTAMINATION NEAR THE SITE, AND WILL TREAT THE HIGHLY CONTAMINATED GROUND WATER NEAR THE SITE. THESE ACTIONS WILL ADDRESS THE PRINCIPAL THREATS POSED BY THE SITE WHICH INCLUDE PUBLIC HEALTH RISKS DUE TO FUTURE DEVELOPMENT OF THE SITE, PUBLIC HEALTH RISKS DUE TO OFF-SITE MIGRATION OF GROUND WATER, ENVIRONMENTAL IMPACTS ON THE DITCH NORTHEAST OF THE SITE AND DOWN-STREAM WETLANDS.

THE MAJOR COMPONENTS OF THE SELECTED REMEDIAL ACTIONS INCLUDE:

* ON-SITE TREATMENT OF AN ESTIMATED 35,000 CUBIC YARDS OF CONTAMINATED SOIL AND WASTE MATERIAL BY SOLIDIFICATION STABILIZATION FOLLOWED BY ON-SITE DEPOSITION OF THE SOLIDIFIED MATERIAL. THE SOLIDIFICATION/STABILIZATION OPERATION WILL BE CONSIDERED SUCCESSFUL IF IT REDUCES THE MOBILITY OF CONTAMINANTS SO THAT LEACHATE FROM THE SOLID MASS WILL NOT CAUSE EXCEEDANCE OF HEALTH BASED LEVELS IN THE GROUND WATER.

* EXCAVATION AND ON-SITE SOLIDIFICATION STABILIZATION OF APPROXIMATELY 500 CUBIC YARDS OF CONTAMINATED SEDIMENTS IN THE DITCH ADJACENT TO THE NORTHEAST BOUNDARY OF THE SITE,

* INSTALLATION AND OPERATION OF A GROUND WATER PUMPING SYSTEM TO INTERCEPT CONTAMINATED GROUND WATER FROM THE SITE;

* INSTALLATION AND OPERATION OF A DEEP, CLASS I, UNDERGROUND INJECTION WELL FOR DISPOSAL OF THE CONTAMINATED GROUND WATER; OF IF A NO-MIGRATION DEMONSTRATION IS DISAPPROVED BY US EPA, INSTALLATION AND OPERATION OF A

TREATMENT SYSTEM FOR THE CONTAMINATED GROUND WATER TO REMOVE HAZARDOUS SUBSTANCES FOLLOWED BY DEEP WELL INJECTION OF THE SALT CONTAMINATED WATER; OR INSTALLATION AND OPERATION OF A TREATMENT SYSTEM FOR THE CONTAMINATED GROUND WATER TO REMOVE HAZARDOUS SUBSTANCES FOLLOWED BY REINJECTION OF THE SALT CONTAMINATED GROUND WATER INTO THE CALUMET AQUIFER IN A MANNER THAT WILL PREVENT SPREADING OF THE SALT PLUME.

* INSTALLATION OF A CONDUIT IN THE DITCH ALONG THE SITE AND A FINAL SITE COVER SATISFYING RCRA CLOSURE REQUIREMENTS, IF APPLICABLE OR IF CONSIDERED RELEVANT AND APPROPRIATE (THE QUALITY OF CAP REQUIRED WILL DEPEND ON THE RESULTS OF TESTS ON THE SOLIDIFED MATERIAL;

* RESTRICTION OF SITE ACCESS AND IMPOSITION OF DEED RESTRICTIONS AS APPROPRIATE;

* RELATED TESTING AND LONG TERM MONITORING.

THE GROUNDWATER TREATMENT AND UNDERGROUND INJECTION PORTIONS OF THE REMEDIAL ACTION MAY BE COMBINED WITH THE REMEDIAL ACTION FOR MIDCO I. IN THIS CASE, THE COMBINED TREATMENT CONSTITUTES AN ON-SITE ACTION, FOR PURPOSES OF THE OFF-SITE POLICY AND FOR COMPLIANCE WITH THE REQUIREMENTS OF THE RESOURCE CONSERVATION AND RECOVERY ACT.

2) Record of Decision (ROD):

Operable Unit: 01

ROD ID: EPA/AMD/R05-92/193

ROD Date: 04/13/1992

Media: Soil Sediments, Ground Water

Contaminant: VOCs Metals Inorganics

Abstract: SITE HISTORY/DESCRIPTION: The 7-acre MIDCO II site is an abandoned chemical waste storage and disposal facility in Gary, Indiana. Land use in the surrounding area is predominantly industrial. The underlying aquifer, which is used primarily for non-drinking purposes, is highly susceptible to contamination from surface sources. From 1976 to 1978, this site was used for treatment, storage, and disposal of chemical and bulk liquid wastes. Onsite pits were used for disposal, from which wastes percolated into and contaminated the ground water. An overflow pipe from a filter bed disposal pit discharged directly into a ditch draining directly into the nearby Grand Calumet River. Additionally, an estimated 10 waste storage tanks were deteriorated and leaking. In 1977, a fire at the site destroyed an estimated 50,000 to 60,000 waste drums. In 1981, EPAinstalled a fence around the site. From 1984 to 1989, EPA removed all surface wastes, including thousands of drums and numerous tanks of chemical waste; excavated and disposed offsite subsurface soils and wastes from the sludge pits and the filter bed; and extended the site fence. This ROD amends a 1989 ROD that addressed the

remaining contaminated soil, pit wastes, and ground water by treatment of an estimated 35,000 cubic yards of soil wastes using solidification/stabilization followed by onsite disposal; excavation and solidification/stabilization of 500 cubic yards of contaminated sediments followed by onsite disposal; covering the site in accordance with RCRA landfill closure requirements; ground water pumping and injection into a shallow or deep aquifer with or without treatment, depending on treatment studies; and implementing deed and access restrictions. The amended remedy reduces the estimated amount of soil to be treated, as a result of amended soil CALs and a determination that arsenic may not be present above background levels. The primary contaminants of concern affecting the subsurface soil, sediment, and ground water are VOCs, including toluene, TCE, and xylenes; metals, including chromium and lead; and inorganics. PERFORMANCE STANDARDS OR GOALS: Ground water clean-up standards are not changed from the 1989 ROD. Treatment required prior to OU1 are further defined compared to the 1989 ROD, and include at a minimum treatment to MACs, which are required for RCRA delisting. Specific MACs include methylene chloride 31.5 ug/l; trichloroethene 31.5 ug/l; toluene 6,300 ug/l; chromium 630 ug/l; nickel 630 ug/l; and lead 99.5 ug/l. Treatment below the MACs will be required if necessary to protect underground sources of drinking water. Soil treatment action levels are increased from 1x10[-6] and HI = 1 in the 1989 ROD to 5x10[-4] and HI = 5 in this ROD. INSTITUTIONAL CONTROLS: Institutional controls including deed and access restrictions will be implemented to protect the integrity of the site cover and operational aspects of the remedy.

Remedy: SELECTED REMEDIAL ACTION: The amended remedial action for this site includes reducing the amount of soil to be treated from an estimated 35,000 cubic yards to an estimated 12,200 cubic yards; excavating and treating the contaminated soil onsite using soil vapor extraction, followed by in-situ solidification/ stabilization; excavating an estimated 500 cubic yards of contaminated sediment from a ditch adjacent to the northeast boundary of the site, with onsite solidification/stabilization; pumping and onsite treatment of contaminated ground water using air stripping and carbon adsorption, or possibly precipitation, with deep well injection of the treated water; constructing a final vegetated RCRA cover over the entire site; implementing institutional controls including deed restrictions, and site access restrictions; conducting long-term monitoring and providing for a contingency remedy if clean-up action levels for the Calumet Aquifer are technically impracticable to attain which includes low-level pumping to contain contaminated ground water and additional institutional controls. The ground water treatment or underground injection portions of this remedy may be combined with remedial actions for the adjacent Midco I site. The estimated present worth cost for this amended remedial action is $13,000,000, which includes an annual O&M cost of $660,000.

URL: http://www.epa.gov/superfund/sites/rodsites/0501805.htm
This page was last updated on: April 15, 2002
Site maintained by: Office of Emergency and Remedial Response
brown.margret@epa.gov

NINTH AVENUE DUMP

Site Information:

Site Name: NINTH AVENUE DUMP

Address: 7357 W NINTH AVE

GARY, IN 46402

EPA ID: IND980794432

EPA Region: 05

County: 089 LAKE

Latitude: +41.593400

Longitude: -087.429000

NPL Status: Currently on the Final NPL

Non-NPL Status:

Federal Facility Flag: Not a Federal Facility

Incident Category: Industrial Waste Treatment

Record of Decision (ROD) List:

	ROD ID	ROD Date	OU
1	EPA/ROD/R05-88/071	09/20/1988	01
2	EPA/ROD/R05-89/095	06/30/1989	

02

3 **EPA/AMD/R05-94/260** 09/13/1994
02

1) Record of Decision (ROD):

Operable Unit: 01

ROD ID: EPA/ROD/R05-88/071

ROD Date: 09/20/1988

Media: GROUNDWATER

Contaminant: METALS, ORGANICS, PCBS, PAHS, VOCS, BENZENE, TOLUENE, XYLENES

Abstract: THE NINTH AVENUE DUMP (NAD) IS A 17-ACRE INACTIVE CHEMICAL AND INDUSTRIAL WASTE DISPOSAL SITE LOCATED IN GARY, INDIANA. NAD IS LOCATED IN A LOW-LYING AREA WITH POOR DRAINAGE. PRIOR TO FILLING, THE SITE CONSISTED OF PARALLEL RIDGES SEPARATED BY WETLANDS AREAS. HAZARDOUS WASTE DISPOSAL ACTIVITIES OCCURRED AT THE SITE FROM EARLY TO MID 1970S WITH SOME FILLING CONTINUING UNTIL 1980. THE SITE ACCEPTED DRY INDUSTRIAL, CONSTRUCTION AND DEMOLITION WASTE, OIL, SOLVENTS, PAINT SOLVENTS AND SLUDGES, RESINS, ACIDS, AND FLAMMABLE, CAUSTIC AND ARSENIC-CONTAMINATED MATERIALS. A SMALL-SCALE AUTO WRECKING OPERATION HAS REPORTEDLY BEEN OBSERVED AT THE PROPERTY IN 1975 BY THE INDIANA STATE BOARD OF HEALTH (ISBH) WHICH DOCUMENTED THE PRESENCE OF 10,000 55-GALLON DRUMS AT THE SITE, MANY OF WHICH WERE EMPTY. ADDITIONALLY, THE INSPECTION ESTIMATED APPROXIMATELY 500,000 GALLONS OF LIQUID INDUSTRIAL WASTE AND 1,000 BURIED DRUMS PRESENT AT THE SITE. SUBSEQUENT INSPECTION REVEALED PORTIONS OF DISCARDED AUTO BATTERIES, DRUMMED LIQUID WASTES, AND ABANDONED TANKER TRUCKS. IN 1975 AND 1980 EPA ORDERED THE SITE OPERATOR TO INITIATE SURFACE CLEANUPS. SUBSEQUENTLY, HE REMOVED SOME BARRELS, JUNK CARS, AND TRUCKS. THIS FIRST OPERABLE UNIT ADDRESSES REMEDIATION OF AN OIL LAYER FLOATING ON THE GROUND WATER SURFACE, THE PRINCIPAL ENVIRONMENTAL THREAT AT THE SITE. THE QUANTITY OF OIL UNDER THE SITE IS ESTIMATED AT 250,000 TO 700,000 GALLONS, OF WHICH 100,000 TO 500,000 GALLONS ARE ESTIMATED TO BE RECOVERABLE. SEVERAL ORGANIC AND INORGANIC CONTAMINANTS HAVE BEEN DETECTED IN THE OIL IN HIGHER CONCENTRATIONS THAN IN OTHER MEDIA. OIL SEEPS HAVE BEEN OBSERVED IN ONSITE

PONDS LEADING TO CONCERNS THAT THE OIL MAY BE AFFECTING AQUATIC LIFE, AND AN OIL SHEEN HAS BEEN SEEN ON SEVERAL SURFACE WATER BODIES. THE SECOND OPERABLE UNIT WILL ADDRESS BURIED WASTE, CONTAMINATED SOIL, AND CONTAMINATED GROUND WATER. THE PRIMARY CONTAMINANTS IN THE OIL LAYER INCLUDE: VOCS, BENZENE, TOLUENE, XYLENE, PAHS, ORGANICS, PCBS, METALS, AND CYANIDES.

THE SELECTED REMEDIAL ACTION FOR THIS SITE INCLUDES; CONSTRUCTION OF A SOIL-BENTONITE SLURRY WALL TO COMPLETELY SURROUND THE HYDROCARBON LAYER; SEPARATE EXTRACTION OF OIL AND GROUND WATER THROUGH A SERIES OF CENTRAL EXTRACTION WELLS, FOLLOWED BY STORAGE OF THE RECOVERED OIL IN AN ONSITE STORAGE TANK AND RECHARGE OF THE TREATED GROUND WATER THROUGH RECHARGE WELLS; AND GROUND WATER MONITORING. OIL TREATMENT WILL BE EVALUATED IN THE SECOND OPERABLE UNIT. THE ESTIMATED CAPITAL COST FOR THIS REMEDIAL ACTION IS $1,960,000 WITH ANNUAL O&M OF $190,000.

Remedy: THIS INTERIM REMEDIAL ACTION IS THE FIRST OF TWO OPERABLE UNITS FOR THE SITE. THIS OPERABLE UNIT ADDRESSES THE PRINCIPAL ENVIRONMENTAL THREAT AT THE SITE, AN OIL LAYER FLOATING ON THE GROUNDWATER AND SEEPING INTO WETLANDS AREAS. THE FUNCTION OF THIS OPERABLE UNIT IS TO EXTRACT AND STORE FREE-FLOWING OIL AND CONTAIN REMAINING OIL WITH A SLURRY WALL. THE SECOND OPERABLE UNIT WILL ADDRESS TREATMENT OF THE EXTRACTED OIL, AS WELL AS REMEDIATION OF WASTE, SOIL AND GROUNDWATER CONTAMINATION.
THE MAJOR COMPONENTS OF THE SELECTED REMEDY INCLUDE:
* CONSTRUCTING A SOIL - BENTONITE SLURRY WALL TO COMPLETELY SURROUND THE OIL LAYER;
* INSTALLING AN OIL/GROUNDWATER EXTRACTION AND GROUNDWATER RECHARGE SYSTEM;
* INSTALLING A SMALL SCALE ON-SITE GROUNDWATER TREATMENT SYSTEM TO ALLOW FOR DEWATERING OF THE SLURRY WALL;
* MONITORING GROUNDWATER INSIDE AND OUTSIDE THE SLURRY WALL TO ENSURE ITS EFFECTIVENESS; AND
* INSTALLING AN ON-SITE OIL STORAGE TANK.

2) Record of Decision (ROD):

Operable Unit: 02

ROD ID: EPA/ROD/R05-89/095

ROD Date: 06/30/1989

Media: SOIL SEDIMENT GROUNDWATER FILL MATERIAL

Contaminant: VOCS, BENZENE, TCE, TOULENE, PAHS, PCBS, LEAD

Abstract: THE NINTH AVENUE DUMP IS A 17-ACRE, INACTIVE CHEMICAL AND INDUSTRIAL WASTE DISPOSAL SITE IN GARY, INDIANA. THERE IS INDUSTRIAL, COMMERICAL, AND RESIDENTIAL DEVELOPMENT IN THE SURROUNDING AREA. THERE ARE APPROXIMATELY 60 INDUSTRIAL AND RESIDENTIAL WATER SUPPLY WELLS WITHIN 1 MILE OF THE SITE. INTERCONNECTING PONDS AND WETLANDS AREAS BORDER THE WASTE DISPOSAL AREAS INTO THE NORTH, WEST, AND SOUTH. THE WETLANDS AREAS TO THE EAST AND TO THE SOUTH OF THE SITE ARE RELATIVELY UNDISTURBED. HAZARDOUS WASTE DISPOSAL OCCURRED AT THE SITE FROM THE EARLY TO MID-1970S, WITH SOME FILLING ASSOCIATED WITH CLEANUP ACTIVITIES CONTINUING UNTIL 1980. INDUSTRIAL, CONSTRUCTION, DEMOLITION, AND CHEMICAL WASTES WERE ACCEPTED AT THE SITE. SPECIFIC INDUSTRIAL WASTES WHICH WERE ACCEPTED AT THE SITE INCLUDE OIL, PAINT, SOLVENTS AND SLUDGES, RESINS, AND FLAMMABLE, CAUSTIC, AND ARSENIC-CONTAMINATED MATERIALS. A STATE INSPECTION IN 1975 REVEALED THAT THERE WERE APPROXIMATELY 10,000 55-GALLON DRUMS AT THE SITE. ADDITIONALLY, THE STATE ESTIMATED THAT 500,000 GALLONS OF LIQUID INDUSTRIAL WASTE WERE DUMPED, AND 1,000 DRUMS WERE BURIED ONSITE AND IN CONTACT WITH GROUND WATER. AS A RESULT OF 1975 STATE ORDERS AND 1980 EPA ORDERS TO INITIATE SURFACE CLEANUP, THE SITE OPERATOR REMOVED DRUMS, TANK CARS, AND SOME CONTAMINATED SOIL FROM THE SITE'S SURFACE. THE FIRST RECORD OF DECISION (ROD), SIGNED IN SEPTEMBER 1988, ADDRESSED REMEDIATION OF AN OIL LAYER FLOATING ON THE GROUND WATER SURFACE AND WILL INCLUDE CONSTRUCTION OF A SLURRY WALL AROUND THE CONTAMINATED PORTION OF THE SITE AND EXCAVATION AND ONSITE STORAGE OF CONTAMINATED SOIL. THIS SECOND AND FINAL REMEDIAL ACTION ADDRESSES THE REMAINING THREATS TO THE SITE WHICH INCLUDE CONTAMINATED SOIL, SEDIMENT, FILL MATERIAL, GROUND WATER (GENERALLY ONSITE), AND OIL COLLECTED DURING THE FIRST OPERABLE UNIT. THE PRIMARY CONTAMINANTS OF CONCERN AFFECTING THE SOIL, SEDIMENT, FILL MATERIAL, AND GROUND WATER ARE VOCS INCLUDING BENZENE, TCE, AND TOLUENE; OTHER ORGANICS INCLUDING PAHS AND PCBS; AND METALS INCLUDING LEAD.

THE SELECTED REMEDIAL ACTION FOR THIS SITE INCLUDES EXCAVATING APPROXIMATELY 36,000 YD3 OF THE MOST SEVERELY OIL-CONTAMINATED WASTE AND FILL MATERIALS FROM THE AREA INSIDE THE SLURRY WALL, ONSITE THERMAL TREATMENT OF EXCAVATED WASTE, FILL, AND PREVIOUSLY EXTRACTED OIL, FOLLOWED BY FILLING THE EXCAVATED AREA WITH INCINERATOR AND GROUND WATER TREATMENT PROCESS RESIDUES, DISCARDED DRUMS, CONTAMINATED SEDIMENT REMOVED FROM ON- AND OFFSITE PONDS, AND TRENCH SPOILS; COVERING THE AREA CONTAINED BY THE SLURRY WELL

WITH A RCRA CAP; PUMPING AND TREATMENT OF GROUND WATER INSIDE THE SLURRY WALL WITH REINJECTION OF MOST OF THE GROUND WATER WITHIN THE SLURRY WALL TO PROMOTE SOIL FLUSHING; PUMPING AND TREATMENT OF CONTAMINATED GROUND WATER OUTSIDE THE SLURRY WALL WITH REINJECTION OR DISCHARGE TO SURFACE WATER; DISMANTLING, DECONTAMINATING, AND REMOVING THE OIL STORAGE UNIT CONSTRUCTED UNDER THE FIRST OPERABLE UNIT; CONTINUED LONG-TERM GROUND WATER MONITORING; AIR MONITORING DURING REMEDIAL ACTIVITIES; AND IMPLEMENTING INSTITUTIONAL CONTROLS TO PROTECT THE SITE AND RESTRICT GROUND WATER USE. THE ESTIMATED PRESENT WORTH COST FOR THIS REMEDIAL ACTION IS $22,209,000 WHICH INCLUDES AN ANNUAL O&M COST OF $489,000.

Remedy: THIS REMEDIAL ACTION IS THE SECOND AND FINAL OF TWO OPERABLE UNITS FOR THE SITE. THE FIRST OPERABLE UNIT ADDRESSED AN OIL LAYER FLOATING ON THE GROUNDWATER THROUGH OIL EXTRACTION, STORAGE, AND CONTAINMENT WITH A SOIL/BENTONITE SLURRY WALL. THE FINAL REMEDY ADDRESSES ALL REMAINING THREATS AT THE SITE, INCLUDING CONTAMINATED SOILS, FILL MATERIALS, STORED OIL, GROUNDWATER, SURFACE WATER AND SEDIMENT.

THE MAJOR COMPONENTS OF THE SELECTED REMEDY INCLUDE;

* EXCAVATION OF APPROXIMATELY 36,000 CUBIC YARDS OF OIL CONTAMINATED WASTE AND FILL DOWN TO THE NATIVE SAND,
* THERMAL TREATMENT OF EXCAVATED FILL AND EXTRACTED OIL, MOST LIKELY IN A MOBILE ON-SITE INCINERATOR,
* REMOVING DEBRIS AND CONTAMINATED SEDIMENTS FROM ON AND OFF-SITE SURFACE WATER BODIES,
* FILLING THE EXCAVATED AREA WITH TREATMENT PROCESS RESIDUALS, TRENCH SPOILS AND POND SEDIMENTS AND DEBRIS,
* COVERING THE AREA CONTAINED BY THE SLURRY WALL WITH A RCRA SUBTITLE C CAP,
* EXTRACTION, TREATMENT AND REINJECTION OF CONTAMINATED GROUNDWATER INSIDE THE SLURRY WALL TO PROMOTE SOIL FLUSHING,
* DISCHARGE OF A SMALL QUANTITY OF GROUNDWATER OUTSIDE THE SLURRY WALL TO COMPENSATE FOR INFILTRATION,
* DEED AND ACCESS RESTRICTIONS TO PROHIBIT USE OF GROUNDWATER UNDER THE SITE AND PROTECT THE CAP, AND
* LONG TERM GROUNDWATER MONITORING.

3) Record of Decision (ROD):

Operable Unit: 02

ROD ID: EPA/AMD/R05-94/260

ROD Date: 09/13/1994

Media: groundwater, sediments, soil

Contaminant: Ketones, chlorinated ethanes, BETX, PAHs, phenols, pesticides, PCBs, plasticizers, dioxins, furans, VOCs, pesticides, metals

Abstract: Please note that the text in this document summarizes the Record of Decision for the purposes of facilitating searching and retrieving key text on the ROD. It is not the officially approved abstract drafted by the EPA Regional offices. Once EPA Headquarters receives the official abstract, this text will be replaced.

The purpose of this Record of Decision Amendment is to present a change for the final site remedy for the Ninth Avenue Dump site.

The Ninth Avenue Dump site is an inactive chemical and industrial waste disposal site and is located in Gary, Indiana. It occupies approximately seventeen acres and is situated in an area of mixed industrial, commercial, and residential property use.

The site is located in a low-lying area with poor drainage. Prior to filling, the site consisted of parallel ridges separated by wetland areas. The site is relatively flat with small depressions and mounds remaining from waste disposal or cleanup activities. A slurry wall surrounds the area of the site that contained groundwater contamination which was known or suspected, at the time of the construction of the wall, to exceed acceptable concentrations. The wall is keyed about three feet into a clay formation that is approximately 30 feet below the ground surface. Situated within the slurry wall is a pond and wetland area. A fence had been installed around the site, which now includes portions of adjacent properties.

The site had been used for the disposal of hazardous wastes from the early to mid 1970s. Buried wastes at the site include foundry sand, wood, concrete, bricks, metals, slag, non-containerized liquids and sludges, and drummed liquid and solid materials. Depth of fill ranges from zero to ten feet. The water table is about three feet below the surface. Most of the filling appeared to have been in the central and southern portions of the site, with filling apparently having stopped at the ponded area in the southern portion. During the remedial investigation (RI), it was found that some of the soils were contaminated with a variety of ketones, chlorinated ethanes, BETX (benzene, ethylbenzene, toluene, and xylene), polycyclic aromatic hydrocarbons (PAHs), phenols, pesticides, polychlorinated biphenyls (PCBs), plasticizers, and dioxins and furans. On- and off-site surface water bodies and sediments contained only low levels of volatile organic compounds (VOCs), PAHs, pesticides, and metals at low frequencies of detection. An oil layer was found floating on the

groundwater in the central and south central portions of the site. The groundwater under the site was found to be contaminated with approximately 100 organic and inorganic substances, including many of the compounds found in the oil layer. However, groundwater contamination was found, for the most part, to have not migrated beyond the site boundaries, except on the eastern and northern sides of the site. The groundwater on the site is also contaminated by high concentrations of dissolved solids, including chlorides, that have migrated from an off-site source south of the site.

Remedy: The remedial action for the site consists of two operable units. The first operable unit addressed an oil layer floating on the groundwater by means of oil and groundwater extraction, oil storage, reintroduction of the groundwater, containment with a slurry wall, and management of excess surface water. The extracted groundwater was treated prior to reintroduction. The second operable unit, which is being amended by this decision document, addresses the remaining threats at the site.

The major components of the selected remedy for the second operable unit include: installation of an intermediate slurry wall that will separate the surface water area from the contaminated area (primary containment area); removal of debris and contaminated sediments from surface water bodies on the site that are to remain, and placement of this material under the cap; installation of a soil vapor extraction system covering the portions of the primary containment area known to be contaminated (after necessary dewatering) and subsequent operation of the system to provide a performance that is appropriate and acceptable while maintaining the water level about 10 feet below the present surface; disposal of the oil extracted during implementation of the first operable unit in a manner which is appropriate and acceptable, most likely in an off-site incinerator; installation of a cap over the primary containment area, landscaping of the site, and establishment of a storm water management system which includes discharge of excess water; containment or extraction and disposal of contaminated groundwater or sources of groundwater contamination found outside the primary containment area; removing or securing any equipment which was used during implementation of the first operable unit that will not be used as part of this remedy; maintenance of an acceptable water level within the primary containment area and disposal of the excess water; deed and access restrictions that prohibit use of groundwater at the site and protect the remedy; and operation and maintenance of the remedy, including the fence and slurry wall installed in the first operable unit, and monitoring of the site to ensure protectiveness.

URL: http://www.epa.gov/superfund/sites/rodsites/0501964.htm
This page was last updated on: April 15, 2002
Site maintained by: Office of Emergency and Remedial Response
brown.margret@epa.gov

WASTE, INC., LANDFILL

Site Information:

Site Name: WASTE, INC., LANDFILL

Address: 1701 EAST US 12
MICHIGAN CITY, IN 46360

EPA ID: IND980504005

EPA Region: 05

County: 091 LA PORTE

Latitude: +41.721669

Longitude: -086.880000

NPL Status: Currently on the Final NPL

Non-NPL Status:

Federal Facility Flag: Not a Federal Facility

Incident Category: Landfill

Record of Decision (ROD) List:

	ROD ID	ROD Date	OU
1	EPA/ROD/R05-94/249	08/18/1994	01

1) Record of Decision (ROD):

Operable Unit: 01

ROD ID: EPA/ROD/R05-94/249

ROD Date: 08/18/1994

Media: groundwater

Contaminant: Semi-volatile organics, polychlorinated biphenols (PCBs)

Abstract: Please note that the text in this document summarizes the Record of Decision for the purposes of facilitating searching and retrieving key text on the ROD. It is not the officially approved abstract drafted by the EPA Regional offices. Once EPA Headquarters receives the official abstract, this text will be replaced.

The site currently known as the Waste, Inc. Landfill site is located in LaPorte County, Indiana. The site is bound by U.S. Highway 12 to the northwest, Michiana Auto Builders to the north and Sullair Corporation to the east.
Prior to its development as a landfill, the property was used as farmland. Landfilling activities began as early as 1954, when several small disposal mounds were constructed in the northern portion of the site. The mounds consisted of a variety of different wastes including: debris, fill, and scrap metal. As time passed, these mounds greatly expanded. By 1965, the site had developed into a large unpermitted landfill and was operated by an unlicensed company called Dis-Pos-All Services.

In 1970, Dis-Pos-All Services submitted a proposal to the Indiana Stream Pollution Control Board for an operation permit. Under this
proposal, the landfill would only accept wood, paper, and cardboard wastes and would also begin the acceptance of foundry sand to be used as cover material. The Board issued a non-objection letter to this proposal in July, 1971. However, several subsequent inspections by the Indiana State Board of Health (ISBH) determined that in addition to accepting the permitted wastes, the site was also accepting unapproved materials.

In 1972, Dis-Pos-all sold its operation to Waste Inc. In 1975, Waste Inc. submitted an application to the ISBH for a construction and operation permit for the existing landfill. This application was denied. However, Waste Inc appealed the ISBH's refusal and because a hearing was never scheduled, the site continued to operate. In 1981, an Agreed Order was executed between Waste Inc. and the ISBH, which set conditions for the continued operation of the landfill. In August 1982, a Consent Order was signed and the site was closed with the exception of the continued acceptance of foundry sand for use as a landfill cover. In 1983, in response to the State of Indiana enforcement actions, a Court Order demanded proper closure of the site.

Remedy: The selected remedial action for this site is made up of several components. The first component is to install a Subtitle D cap. The second component is to collect contaminated leachate in a trench along the southern site boundary. The third component is to install and operate groundwater extraction wells on-si Sanitary District of Michigan City via direct discharge. The fifth component is to rerout or abandon the existing sewer line. The sixth component is to remove the on-site underground fuel storage tank. The seventh component is to post fish advisory signs along Trail Creek. The eighth and final component is to abandon the existing on site groundwater well.

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This page was last updated on: January 25, 2002
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brown.margret@epa.gov

APPENDIX F

STAKEHOLDER COMMENTS

The following comments were received within the 60-day public comment period after the initial public meeting introducing the draft version of the Little Calumet-Galien WRAS. This meeting was held on April 4, 2002, in Portage, Indiana.

The Little Calumet-Galien WRAS has been revised to incorporate stakeholder comments, where appropriate. The following is a reproduction of the stakeholder comments:

General Comments

None

Specific Comments

Part I:

- Executive Summary, Overview of Little Calumet-Galien Watershed: The Calumet watershed hydrography is inaccurate. The western section of the Little Calumet should flow out the Cal-Sag Channel in Illinois into the Mississippi drainage basin. The same is normally true of the west branch of the Grand Calumet River, although sometimes these waters may flow into Lake Michigan through the O'Brien Lock and Dam on the Calumet River. The east branch of the Grand Calumet River usually flows into Lake Michigan through the Indiana Harbor and Ship Canal.

- Executive Summary, Water Quality Goal: The description is mealymouthed. These waters are designated for aquatic habitat and full-body contact recreational uses.

- Ch. 1, Introduction: Needs an explanation of what the "Clean Water Action Plan" is.

- 2.1 Watershed Overview: See comment about watershed above.

- 2.5 Surface Water Use Designations: These watersheds are in the Lake Michigan basin. Therefore, the applicable water use designation rule is 327 IAC 2-1.5-5.

- 2.5.1 Surface Water Classifications: While there are no exceptional use waters, the waters of the Indiana Dunes National Lakeshore, which includes part of the Little Calumet, are designated as Outstanding State Resource Waters. Designated salmonid waters should also be mentioned. The applicable rule sections are 2-1.5-5 and 2-1.5-19.

- 2.7 Superfund Sites: There are several more Superfund sites in the watershed: American Chemical Services, Griffith; Midco I and II, Gary; H&H Recycling, Gary; Ninth Avenue Dump, Gary; U.S.S. Lead, East Chicago (this was a RCRA closure, but is essentially the same as a Superfund cleanup and may have lately been added to the NPL). It is not clear what the relevance of this section is to a watershed restoration strategy. All of these sites, I believe, have been remediated to a greater or lesser degree. I believe all of them except H&H involve groundwater or surface water contamination. I think you either need to add more information to this section, explaining its significance to the WRAS, or delete it.

- 3.1.1 E. coli bacteria: The applicable rule subsection is 2-1.5-8(e)(2). Many IAC references in this chapter need to be changed to the corresponding subsections of 2-1.5-8.

- 3.1.3 Oxygen-Consuming Wastes: It would be helpful for non-experts like myself to explain the meaning and significance of BOD and CBOD, which are terms I frequently run across in technical writing on dissolved oxygen. There is a higher dissolved oxygen requirement for salmonid streams (cf. 2-1.5-8(d)(1).

- 4.1.1 Office of Water Quality Programs: second paragraph - "...the Section began a five-year synoptic study..." I suspect that few readers are going to know what "synoptic" means. Perhaps "comprehensive" would be better.

- 4.1.2 Local Volunteer Monitoring Programs: Save the Dunes Conservation Fund should be included. Contact Sandy Wilmore, 219/879-3564.

- 4.2 Summary of Ambient Monitoring Data: Results of the benchmark characteristic analysis are Appendix A in my copy, not B as stated in this paragraph. The data seems pretty worthless for the non-expert.

- 5.1.1 State Authority for Indiana's Water Quality Program: I would suggest adding a paragraph stating that the state rulemaking authority for water is the Water Pollution Control Board, which normally meets on the second Wednesday of the month in the Government Center South. Stress that these meetings are open to the public. Names and contact information of board members should be listed along with an IDEM contact for obtaining agendas, draft rules and rulemaking calendar, meeting notices, changes in board membership and other information. A brief explanation of the difference between rules and laws might also be helpful.

- 5.1.4 Total Maximum Daily Loads: It would be appropriate to indicate here the increase in impaired waterways between the 1998 303(d) list and the draft for 2002, to state how many individual TMDLs are envisioned by the 2002 list (assuming each impairment requires a separate TMDL), and the number of TMDLs completed and in development.

Part I, Tables:

- 303(d): The WRAS will be immediately out-of-date if they do not include the 2002 303(d) list.

- Population: Data seems unnecessarily old. Are the 2000 census numbers not available at this level of detail?

- Outstanding rivers: Information on Outstanding State Resource Waters and WPCB-designated salmonid streams should be included. In Table 2.5, the meaning of the numbers in the line below the river names is unclear.

- Water use: Table 2-7 is very useful. Is there no more recent data? A footnote should be added saying that most of the people in the watershed and many companies get their water from Lake Michigan. In fact, the Lake Michigan totals should be added if they are available. Otherwise the information here is potentially misleading.

- Table 3-2: The waterbodies to which the CSOs discharge should be noted. Gary and Hammond have CSO outfalls on both the Grand Calumet and Little Calumet rivers, and the number of each should be listed. East Chicago may have outfalls on both the Grand Cal and the Indiana Harbor Ship Canal. Gary has 13 CSO outfalls.

- 3-3, NPDES Permitted Facilities: Table should be dated, sourced and an explanation of active/inactive status given. The information appears fairly recent, since the Whiting refinery is listed as BP rather than Amoco. Still, there are some out-of-date entries: Nipsco has shut down its Dean Mitchell station and LTV Steel Co. was shut down and has been sold to International Steel Group, which plans to start some of it back up. Still, this could be a very useful list, especially if there is a reference somewhere about how people could use the NPDES permit numbers to obtain updated information on the web.

Part II:

- Chapter 1, Stakeholder Groups: Contact information for groups should be provided. This should probably be done in Part I. It is not clear why that information is repeated here. Are you planning at some point to add the groups' concerns

and priority issues to this section? Save the Dunes Conservation Fund should be included.

- Ch. 2, WQ Concerns Identified by State and Federal Agencies: This is very interesting information, which I was unaware of, but it is very poorly presented. The text, table and figure should be placed together. The numeric references from the figure to the table are unclear. The numeric range on the table (1=good, 5=poor) should be repeated below the table, and the meaning of nd (no data, I assume) should be included.

- Ch. 3, Impaired Waters: Should be updated to 2002 list. Locations of different segments of same body of water need to be identified. Mention should be made of limited number of TMDLs completed to date.

- Ch. 4, Recommended Management Strategies: Nowhere is the generic nature of the WRAS more evident than in this chapter. There is no mention of the biggest problem for the Grand Calumet and the western half of the Little Calumet, which is contaminated sediments. Streambank erosion and stabilization, on the other hand, is a relatively minor problem. CSOs are a much more acute problem than failing septic systems; they should be dealt with separately rather than lumped in with other point sources. As the culmination of the WRAS, this is a disappointment.

- Ch. 5, Future Expectations and Actions: This section is also a disappointment. Nothing indicates that anyone is taking ownership of the WRAS. In the executive summary, you state that the goal of the WRAS is to assist local citizens with improving water quality. The introduction to Part I, Chapter 1 also envisions a partnership in which states work with public agencies, private organizations and citizens. Yet this section does not indicate who has responsibility for the WRAS or gives any reliable indication that it won't become just another study collecting dust on a shelf: "The Watershed Restoration Action Strategy may be revised or amended when sufficient information becomes available (emphasis added)." This summary makes it appear that the WRAS is directed more toward the Office of Water Quality than to people living in the watershed. There is no suggestion here as to how citizens can get involved, let alone how they can make improvements to their watershed without having to rely on the state, a course of action that requires the patience of Job. You risk allowing all the useful information contained in previous chapters to go to waste if you don't provide a clear concluding message encouraging stakeholders to come together and reach consensus on how to improve their watersheds, and suggest a useful framework for doing so.